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Help for Export Trade

THE importance to the national welfare of exports of railway material has often been stressed by Government spokesmen. Reference to it was made last Monday, by Mr. John Ratter, Member of the British Transport Commission, in outlining the progress made in the modernisation of British Railways. A flow of orders from British firms for motive power, rolling stock, and electrical, signal, and other equipment affords the manufacturers opportunities of perfecting design, continuous production runs which increase efficiency, and scope for operational research—all of great assistance in production for overseas markets. The Government, in establishing the United Kingdom Railway Advisory Service, has as its primary object the dissemination of British technical knowledge and experience to managements of railways overseas, but British manufacturers are bound to benefit when experience shows that much British-made equipment is unique, or proved to be the best, of its kind. The Board of Trade is assiduous in collecting and publishing information on the requirements of railways in many countries. More, however, could be done by the Government in guaranteeing export credits. Foreign competitors have been able to capture orders which might, as regards prices, delivery dates, and the quality of the products, have been awarded to British firms, because of the extended credits competitors could offer. Their Governments, or international banks, enabled them to do so. If the British Government has the interests of export trade at heart, it must take more vigorous action in this direction. One result of the establishment of the European Common Market will be increased ability of the "Six" countries to afford facilities for long-term credits. The position of British manufacturers moreover is aggravated by the increased independence of some countries of the British Commonwealth which have long been markets for British exporters. However much railway administrations there may esteem British products, the value of which has been proved by experience, liberal credit facilities are a strong temptation to do business with makers even of relatively unproved or unfamiliar material. Our competitors are active in bidding for orders in many newly-enfranchised territories of the Commonwealth and elsewhere. Coupled with this is the need for the British Government to play its part in encouraging the provision of capital for railway and other activities in under-developed countries. The situation demands prompt action at a high level.

Restrictions on State Spending

APPLICATION in the near future to expenditure by the State of restraints equivalent to those already applied to private industry was indicated in the House of Commons last week by the Chancellor of the Exchequer, Mr. D. Heathcoat Amory. The Government, he stated, was not neglecting the importance of applying the same more rigorous standards to the public sector, "especially when considering proposals for more increases and new increases in Government expenditure." The standards already applied in examination of proposals for expenditure of nationalised transport are severe, and the Chancellor presumably did not have the British Transport Commission particularly in mind. During his explanation on the second reading of the Finance Bill, he seems to have hoped that the clause empowering the Exchequer to make advances for a three-year period to the seven nationalised industries would disarm criticism. He expressed also his confidence that the Budget increase in profits tax would not interfere with the current upward trend in industrial investment, but would have some restraining effect on consumer spending.

Increased Demand for Machine Tools

NEW orders for machine tools to the value of about £13,000,000 were received by British manufacturers in February. This was more than twice as much as a year previously. Export orders are reported to have been nearly three times the amount of those booked in February, 1959, and orders for the home market a little more than double. The recovery in the industry is continuing, and now covers all sections except for the heaviest tools. The industry is now working to capacity. Delivery dates were stated recently to be lengthening. In February, deliveries exceeded the January rate by 9 per cent and the February, 1959, figure, by 36 per cent. Export deliveries were 27 per cent more than in January and 55 per cent more than in February last year. Total deliveries nevertheless were well below the rate of net new orders. The main problem is shortage of labour in certain areas—mainly in the Midlands. There is no indication that the steep rise in orders is coming to an end.

Rise in U.K. Engineering Production

AN increase of 13 per cent in engineering production in the United Kingdom in the first three months of the current year compared with 1959 is reported by the Board of Trade. This compares with a rise of 11 per cent as between January–March of 1960 and 1959, in British industry as a whole. The increase is mainly in capital engineering and electrical goods, in contrast to last year, when it was limited to consumer goods. Despite the sharp rise in production, orders also have increased, especially for exports, though the level of the latter remains below that of early 1958. In the case of heavy electrical equipment, price competition from Continental exporters is stated to be keen, and manufacturers in all countries are relying on home market sales to subsidise exports. Export prices are reported to be tending to fall. The hardest

problem in the export market is the difficulty of offering export credit terms which will compete with those provided in the U.S.A., Germany or Switzerland.

B.I.C.C. Expansion

THE official opening of a fully-automatic copper rod rolling mill at the Prescot Works of British Insulated Callender's Cables Limited by Mr. Reginald Maudling, President of the Board of Trade, on May 10, represents a significant advance in rod rolling products. The mill, which cost approximately £1,500,000, is housed with a shop 520 ft. long, and 104 ft. wide, with a total floor area of 72,000 sq. ft. With a full production of 100,000 tons a year it can produce rod for drawing round wire or for rolling into strips. An important feature of the new mill is that it is designed with two special intermediate finishing and finishing trains. Rods of the same diameter or of two different sizes can be rolled at the same time. The size of coiled rod diameter that can be rolled range in $\frac{1}{16}$-in. steps from $\frac{1}{4}$ in. to $\frac{9}{16}$ in. Much of the ancillary equipment required for railway electrification work, such as telecommunication and feeder cable, catenary wire, and overhead contact fittings, will be made from rod drawn on the new mill.

Advancement of Africans on Rhodesia Railways

PERHAPS the most heartening aspect of the agreement reached in Bulawayo last week on advancement of Africans on the Rhodesia Railways is that the Rhodesia Railways Workers' Union, who were the dissenting party, undertook to accept the majority decision in good faith and loyally to endeavour to make the agreement work. During discussions the R.R.W.U. accepted all clauses designed to remove the colour bar in railway employment. Under the agreement, recruitment to all National Industrial Council grades will be on a non-racial basis, as will admission to the training centre for those jobs for which training courses are held. Instructions will be issued to ensure that applications for employment are dealt with impartially and that there is no racial bias when the question of promotion is considered by departmental promotion committees. In the last 12 months, wastage was about 500 for the grade mentioned in the agreement. Qualifications vary for different grades, but an overall requirement is that recruits to the N.I.C. grades must be able to read, write and speak English.

Ten-year Modernisation Plan in Norway

NEARLY £130 million (kroner 2,4181 million) is to be invested in the ten-year plan for modernisation and improvement of the Norwegian State Railways. Extension of electrification and provision of additional diesel motive power and rolling stock is the largest item, for which £22.2 million is earmarked. Other measures planned are easing of curves and improvements to permanent way (£15.5 million) ; purchase of passenger (£15 million) and goods (£15 million) vehicles; reconstruction of the central passenger station in Oslo (£12.5 million) ; bridge construction (£2.4 million); establishment of rolling stock workshops (£1 million); and cable plants (£1 million). Further electrification presumably will be on the same voltage, 15,000, $16\frac{2}{3}$ cycles as the lines hitherto converted. It will be confined, presumably, to the more heavily-trafficked sections, on several of which conversion schemes have been completed or are in hand ; diesel traction is envisaged for many miles of lines in sparsely populated country.

Reconstruction and Development in Viet-Nam

EXTENSIVE damage to the main line of the Viet-Nam Railways, between Saigon and Hué in South Viet-Nam, was made good only recently with restoration of through passenger and goods services, though speeds are still severely restricted. The metre-gauge system suffered severely during the war of 1941-45 and in the civil war which ended in 1954. Partition in the latter year deprived South Viet-Nam of access to mines supplying locomotive coal. The railway management is reported to be considering electrification on completion of hydro-electric works, and diesel traction on a large scale is envisaged. A $6,000,000 loan from the U.S.A. will facilitate acquisition of diesel-electric locomotives. Six Alsthom diesel-electric locomotives so far have been supplied with French financial assistance. As a temporary measure steam locomotives have been and are being converted to burn oil with, it is understood, satisfactory results. Construction is planned of several branches to serve mines and industrial plants.

C.I.M.A.C. British National Committee Report

A GENERAL meeting of United Kingdom supporters of the International Congress on Combustion Engines (C.I.M.A.C.), was held earlier this week in London to consider the report of the British National Committee for the year to March 31, 1960. Mr. W. K. G. Allen, Chairman, who represents the British Internal Combustion Engine Manufacturers' Association, stated that the fifth International Congress at Wiesbaden in June, 1959, received the highest measure of support yet given by the United Kingdom with ten papers from British authors in the programme total of 35 for technical discussion. Preliminary planning has already begun and a timetable agreed for submission and acceptance of synopses and papers for the sixth International Congress at Copenhagen in June, 1962, for which the theme will be " Recent developments with diesel engines and gas turbines above 3,000 h.p. per engine and with gas engines above 1,500 h.p. per engine." The Committee continues to receive support from all sections of the industry. In the foreseeable future the U.K. may be called on to play the part of Congress host so it is necessary that this support should be maintained.

New Electric Services in Eastern Region

WITH the introduction of electric train services, due later this year, on the Chingford, Hertford East, Bishops Stortford, and Enfield Town lines, British Railways, Eastern Region, the new timetable will show an all-round improvement in train services with a substantial reduction in journey times. At Lower Edmonton, for example, the existing service to Liverpool Street will be stepped up from two trains an hour in off-peak periods, to an average of eight an hour throughout the day. Non-stop trains to Liverpool Street from this station will cut the present 34-min. journey to 15 min. Fast trains to Liverpool Street from Chingford will take 23 min. instead of 35 min. An interesting feature of the electrification programme will be the re-opening for regular passenger traffic, after 40 years, of the former Churchbury Loop now renamed the Southbury Line. Five miles long, it leaves the Enfield Town line at Bury Street Junction, Edmonton, and links it with the Cambridge main line at Cheshunt. All electric trains from Bishops Stortford and Hertford East will travel over the Southbury line to Liverpool Street.

Modernisation of N.E. Region Freight Terminals

IN line with its overall streamlining policy, the North Eastern Region of British Railways is putting measures into effect which are designed to concentrate all classes of traffic on large depots and to integrate road transport with rail. Already, this policy has produced excellent results: over 700 freight depots have been reduced to 611, and most of these now only deal with full loads, warehouse traffic, and coal. The new centres are being equipped with every modern device to enable new and more efficient methods to be used, and this action also is bringing immediate dividends in the shape of improved efficiency, reduced handling costs, and fewer claims for damages. Modernisation is being carried out with a careful eye to economy; existing depots and sheds are examined for development potential before plans for any completely new building are put forward. Nevertheless, much new work may be expected: only two North Eastern depots had been modernised before 1955; all other sheds were in that year virtually as they were on erection 80 to 100 years ago.

Development in Wagon Control

IN this week's New Equipment and Processes Section, we describe a development in automatic wagon control in marshalling yards which is of considerable interest. At present, wagon speeds cannot be controlled with sufficient accuracy in sidings, even in large modern hump yards where primary

and secondary retarders are installed. Observations by British Railways' Research Department have shown that only 51 per cent of wagons reach their target between 0 m.p.h. and the considered safe buffing speed of 4 m.p.h.; 22 per cent fail to reach their target, and 27 per cent impact the stationary wagon at over 4 m.p.h., thereby causing damage to the wagon and its load. These conditions arise from the wide variation in the rollability of wagons. In Great Britain alone, 600 small marshalling yards and many thousands of sidings possess no automatic speed control, although speed is sometimes partly controlled by brakemen running with the wagons. Much costly damage to vehicles and freight inevitably must occur in these smaller groups of sidings. The manufacturer of the retarder and retarder-booster described this week claims to offer a solution to this problem.

American Trackwork Practice

A MINOR but valuable advantage accruing from the installation of C.T.C. and consequent reduction from double to single-track lines is that the road bed thus denuded is proving most useful for running out "off-track" equipment of all kinds, sometimes over considerable distances. The use of such equipment is becoming increasingly popular from the point of view of both facility and economy in maintenance and construction work, and because it causes no interruption to traffic. The practice of staggering rail-joints, widespread in the U.S.A., is proving a distinct handicap in the otherwise economical dismantling, transport and relaying of track in rail-length panels. The New York Central administration, to transfer large quantities of track from Syracuse 600 miles to its new £4,455,000 marshalling yard at Indianapolis by the most economical method, in 39-ft. panels, is having to pull back the rails on one side to form square-joint panels with the aid of a caterpillar tractor.

First New Main-line Diesel Depot for B.R.

A MINOR marshalling yard just south of Finsbury Park Station on the Great Northern Line of British Railways, Eastern Region, was chosen as the site of the first maintenance depot in this country to be built specially for dealing with main-line diesel locomotives. The new depot, brought into use in April, has an ultimate capacity for servicing about 180 locomotives ranging in size from 204-h.p. Barclay diesel-mechanical shunters to the 3,300-h.p. Deltic locomotives now in production by the English Electric Co. Ltd. for service on the East Coast Route. The site gives easy access to Kings Cross passenger and goods stations, Ferme Park marshalling yard, Harringay, and the London area carriage sidings. A feature of the main steel-framed building, which is supported on about 400 piles, is the 111-ft. 6-in. wide single-span roof covering six tracks. The adjoining administrative block is unusual in having a lecture room intended for the teaching of diesel and electrical fundamentals to staff mostly drawn from steam sheds. The depot has been designed to permit extension for dealing with electric locomotives additionally in future.

New Diesel Locomotive Depot in South Wales

A DEPOT for maintenance and servicing main-line diesel locomotives is to be built at Landore, near Swansea, by British Railways, Western Region in connection with the change-over from steam to diesel traction in South Wales, expected to start in 1963. The new depot will deal with the heavy maintenance of about 140 locomotives and the servicing and light maintenance of about 60. It will be on the site of the existing Landore Motive Power Depot, which will be demolished. Plans include a four-track, reinforced-concrete maintenance shed in which eight locomotives can receive attention at any one time. Workshops, stores, overhead crane, bulk lubricating oil storage with piped dispensing, and portable equipment, will be provided. The building will have depressed floors and permanent platforms between tracks. Covered accommodation for servicing will consist of a three-track shed; each track will hold two locomotives. Associated with this accommodation will be overhead sanding facilities, covered fuelling points, and a washing machine. The oil storage depot will consist of three 120,000-gal. tanks.

Progress with British Railways Modernisation

THE speed at which steam is being replaced by electric or diesel motive power on British Railways is shown by the fact that early this year the percentage of coaching train-miles worked by steam was exceeded by that with electric or diesel working. This and other indications of progress were announced at a conference earlier this week by Mr. John Ratter, the Member of the British Transport Commission specially concerned with technical matters.

Since implementation of the railway modernisation plan began in 1955, the number of steam locomotives has been reduced from 18,500 to a little more than 14,000. By 1961, the total number of steam engines will be about 7,800 (or 40 per cent), less than they were in 1954; passenger coaches will have been reduced by 28 per cent, to some 32,000; and the total number of goods wagons will be about 960,000, or 15 per cent, less than when modernisation began. By the end of 1961 it is expected that diesel or electric power will have virtually replaced steam traction in East Anglia and in most of South-East England. Comparatively few steam locomotives will be left on lines in the West of England (west of Newton Abbot); on the St. Pancras main line of the London Midland Region, south of Bedford; and on the East Coast main line from Kings Cross to the North. Steam locomotives will by then be used everywhere mainly for goods duties. Almost all stopping and local passenger train services will be operated by electric or diesel power, as will most long-distance passenger trains.

By the end of 1958, 1,008 route-miles (2,689 track-miles) of British Railways had been electrified. Another 110 route-miles (255 track-miles) were added last year, mainly by completion of the Kent Coast and Clacton-Walton electrification programmes. The latter scheme embraced the first group of lines in Britain to be electrified at the new standard of 25kV. a.c. Work on another 200 route-miles of 25-kV. electrification should be completed this year. In September, it is hoped to bring into operation electric working from Liverpool Street to Enfield Town, Chingford, Hertford East, and Bishops Stortford, in the Eastern Region, and to have completed conversion from 1,500V. d.c. to 25 kV. a.c. of the Liverpool Street to Chelmsford and Southend lines in that Region, in readiness for extension from Chelmsford to connect with the Colchester-Clacton-Walton lines and along the main line beyond Colchester to Ipswich and Harwich and also beyond. In the London Midland Region, full electric working is planned to start in September of the Crewe-Manchester section, the first stage of main-line electrification from Euston to Birmingham, Manchester, and Liverpool. In the Scottish Region, introduction of electric traction at 25 kV. is to be inaugurated in September/October of the Glasgow suburban lines of the former North British Railway serving Helensburgh, Milngavie, Glasgow Queen Street, and Airdrie.

By the end of this year it is expected that electrification work will be at an advanced stage on another 280 route-miles (740 track-miles), all of which should be completed in 1961. This includes the Liverpool-Crewe line. Electric trains, it is hoped, will begin to run on the Liverpool-Crewe section by about the autum of 1961, and so allow engineering resources to be concentrated on the next stage, from Crewe to Birmingham.

As to diesel traction, by the end of this year there will be about 4,000 multiple-unit diesel vehicles in service, almost as many as are at present planned. Over 500 main-line diesel locomotives are in service, and over 1,300 are on order or authorised. It is expected that there will be about 900 in service by the end of this year, and there may be 1,200 main-line diesel locomotives in use by the middle of 1961.

Diesel locomotives to be delivered this year will include the first of the 3,300-h.p. Deltics, which are considered to be the most powerful single-unit diesel locomotives in the world. Twenty-two of this type on order for the East Coast main line will replace 55 steam locomotives. Over 1,400 diesel shunting locomotives at present work in yards throughout British Railways. About 1,750, nearly 90 per cent of the eventual fleet, should be in service by the end of 1961, when steam shunting in marshalling yards will virtually have disappeared. A further development in diesel traction to be introduced this year is the *de-luxe* diesel Pullman expresses between Manchester Central and St. Pancras, and Leicester and St. Pancras (two six-car trains, first class only), and three eight-car trains (including second class) to run between Bristol and Paddington,

and Wolverhampton, Birmingham Snow Hill, and Paddington. All five trains are undergoing acceptance trials. They are the first fully air-conditioned trains in Britain. A notable feature is the attention paid to appearance by the designers, with the help of the British Transport Commission advisory panel on design.

Introduction of diesel and electric passenger services has been accompanied by increases in receipts, as recorded from time to time in our pages. These increases were particularly marked on introduction of the Southern Region Kent Coast electric services, and, in the North Eastern and London Midland Regions, on placing in service diesel multiple-unit trains and railcars.

Speeds of goods trains are steadily rising as more wagons are fitted with continuous brakes. About 300,000 wagons, nearly one-third of the total fleet, are now equipped, and all merchandise wagons should be fitted by the end of 1960. Freight traffic is being concentrated increasingly at fewer but larger centres and railheads, and conveyed between them by express goods trains. These new depots are replacing many older, uneconomic or badly sited installations which are now outmoded or badly sited for modern traffic flows. In the London Midland Region, for example, 170 sundries depots are being reduced to less than 50, and 111 existing marshalling yards will be replaced by 46 modern ones. The latest marshalling yard to be completed is at Margam, Port Talbot, in the Western Region, described in our issue of April 15. Other large yards recently completed are those at Temple Mills, London, replacing 14 former yards in the area, and a similar yard at Thornton (Fife). Similar work is in progress, or planned, at many other points including Perth, Millerhill, near Edinburgh, Ripple Lane, near Barking; Sheffield; Peterborough; Adswood and Edgeley, near Stockport; Carlisle; Swanbourne (Bucks); Crewe; Bescot; Newport (Yorks); Lanesley (Durham); Healey Mills (Yorks); Dringhouses, near York; Tonbridge (Kent); Eastleigh (Southampton); Severn Tunnel Junction; Gloucester; and Shrewsbury.

Sundries traffic is being concentrated at depots equipped with the latest mechanical-handling aids. Improvements are in hand, or are planned, at more than 50 of these depots, some of which have been completed recently at Birmingham Lawley Street, Chester General, Derby St. Mary's, Peterborough, and Manchester Oldham Road.

Other types of new buildings or improved facilities which are being provided under the modernisation programme include depots for servicing diesel or electric locomotives and trains. Work is at present in progress, or planned, at about 100 depots throughout the country. Servicing depots and maintenance facilities have been completed recently at Ripple Lane, near Barking; New England; Hither Green; Eastleigh; Bristol (Marsh Junction); Southall; Reading; West London Yard (Paddington); Plymouth (Millbay); Westbury; Selhurst; Stewarts Lane (near Victoria); and at Grove Park. A new diesel depot at Leeds (Neville Hill) will be opened next month.

Among many other traffics which the railways are carrying on an increasing scale are large numbers of motorcars. They include new vehicles from factories, and cars accompanied by drivers and their passengers in car/sleeper and day car/tourist trains.

Track and signalling are being improved in preparation for higher speeds and the more frequent services with the new forms of traction. The standard of the permanent way has been raised on most main routes, and speeds of 90 m.p.h. are now permitted on many lines. To improve traffic flows and eliminate bottlenecks, engineering work of this kind has been completed between Potters Bar and Hadley Wood, on the East Coast main line from Kings Cross to the North, where three new tunnels were driven to provide four tracks instead of two; between Shortlands and Swanley, in Kent, where the tracks have been re-aligned and quadrupled; and at Barking where two flyovers and an underpass have been built. A flyover is nearing completion at Bletchley, on the main line from Euston to the North. Major engineering works to provide additional track facilities are at present in hand, or are planned, at more than 20 other places.

Track improvements include deeper ballasting and better drainage of the track bed, and installation of long-welded rails and concrete sleepers. Output of long rails will increase as more rail-welding depots come into full production. Rail-welding depots have been established at Dinsdale (near Darlington), Chesterton Junction (near Cambridge), Motherwell, and Redbridge (near Southampton). Two more will come into full operation this year, at Castleton (near Manchester), and Hookagate (near Shrewsbury). A second welding plant is to be installed at the Redbridge depot. At the end of 1959 long-welded rails had been laid on 200 miles of track. Another 240 track-miles of long rails will be laid this year, and by mid-1961 the output of long rails is expected to allow for 320 track-miles a year. At the end of last year some 1,500 miles of track had been re-laid with concrete sleepers, and another 300 track-miles will be installed this year.

Re-signalling schemes are in progress or planned in more than 30 areas. They include replacement of semaphore-arm signals by electric colour-light signals; installation of more track circuits; provision of more power-operated in place of manually-operated signalboxes; and extension of the automatic warning system (a.w.s.). Many signalling programmes are being carried out concurrently with electrification schemes. For example, during the electrification of the Kent Coast line, semaphore signals were replaced by modern colour-light types, eight new power signalboxes and 28 relay rooms were built, and 31 old signalboxes were closed. Between Manchester and Crewe, two new power operated signalboxes, at Wilmslow and Sandbach, and many colour-light signals are already in use. Nearly 100 new power-operated signalboxes are to be built and several hundred manually operated signalboxes will be closed during the next two years. About 11,000 colour-light signals are in use and over 1,000 more will be in use by the end of this year.

The plan to equip five main routes with a.w.s. by 1963 is accelerating. When installation began in 1958 it was estimated that within five years about 1,800 route-miles of railway and some 10,000 locomotives and trains would be fitted with the British Railways automatic warning system. Already more than one-third of this total route-mileage, and nearly one-fifth of the locomotives and trains, have been equipped.

Research work by the Commission in less well-known fields has included such diverse studies as the flow of air through pipes, leading to improvements in vacuum brake design; the stability of long-welded rails; behaviour of axlebearings; adhesion between steel wheel and rail; new forms of insulation for 25k-V a.c. electrification; and automatic recording of wagon movements. Studies under operational research have included the impact of wagons during shunting; speedy transmission of information for traffic purposes; and fluctuations in traffic flow and use of regular-interval services. Research has also covered the effects of diesel engine exhausts; analysis of oils to determine engine wear; and the development of durable paint finishes. Three Technical Development Units established at Stooperdale Works (near Darlington), at Derby, and at Leyton (London), have enabled new ideas to be worked out, tested, and applied. Other research work covers applications of electronics, electrification equipment, and extension of transistor techniques to signal interlocking and track circuits.

Forecast for Internal Transport

THE controversial subject "Future Developments of the Internal System of Transport" was chosen for his first major public lecture in London last week by Mr. D. L. Munby, Reader in the Economics & Organisation of Transport in the University of Oxford. His paper was read to the Royal Society of Arts at its headquarters in the Adelphi, W.C.2. Maj.-General G. N. Russell, Member of the British Transport Commission, Chairman of the Eastern Area Board, and formerly Chairman of British Road Services, presided, and the audience included a good many senior officers of the nationalised transport undertakings. A lively discussion ensued. It is possible to mention only a few of the many points made in the paper.

As regards British Railways, Mr. Munby maintains that the Transport Act of 1953 has provided, by and large, the framework for a fully commercial railway system, and that what is now required for the logical completion of this policy is the abolition of the Transport Tribunal and the remaining "nineteenth-century restrictions." If it is assumed, he states, that the maximum charges provide for a real maximum, the railways now have the opportunity to charge the costs that are incurred and to adapt their charges to the market. In practice, he observes, there seems rather greater reluctance to make this true of passenger services than in the case of freight. He might

have added that this is due to the marginal quality of much passenger traffic, and to reluctance to antagonise some of the public. It may well be, he believes, that much past railway capital will have to be written off. If this goes no further than a necessary writing down of capital that can in effect earn nothing, then no economic damage is done; but he stresses that the proper application of commercial principles means that railway users should pay for the track costs that they incur collectively.

The question of track cost he believes, is not a problem for the railways so much as a problem of the roads. Arguments about the total amounts collected from road users in relation to the total amount spent on the road system are by and large irrelevant. The real problem, Mr. Munby states, is whether particular road users pay enough for the particular services they demand. The future of transport in Britain, therefore, clearly depends on the extent to which the principles of the 1953 Act are carried out. It may be, he adds, that governments will deliberately restrict transport, encouraging one particular form at the expense of others.

Doubling of the gross national product may be expected in, say 25 years. Recent experience in many countries suggests that the national product expands more rapidly than the demand for freight transport. As standards of living increase, less money is spent on food and industrial processes make less use of bulky raw materials; a higher proportion of final consumption takes the form either of services or of very highly finished industrial products with a value much greater than their weight. The very limited information available on the carriage of freight in this country, he points out, shows how large is the volume of goods carried by road in relation to that carried by rail. It looks as if road haulage now carries a larger ton-mileage than the railways, and, though coastal shipping carries much of the bulky commodities, it represents only about half the railways' ton-mileage. It does not seem to him likely that these trends will be reserved; they reflect basic features in the economic situation.

The fact that the vast bulk of railway goods traffic is either coal or minerals reflects the fact that the railway system is a product of the early stages of economic growth. For many years ahead, Mr. Munby rightly states, coal will be used in large quantities, but it is a declining industry, because of the fall in exports and of the competition from oil. The British Transport Commission is realistic in assuming that in 1963 its receipts from coal class traffic will be less than in 1957 and 1958. British Railways mineral traffic has not increased in proportion to steel output, largely, he points out, because an increased output of steel is produced from a smaller relative quantity of raw materials. It is reasonable to expect only a modest increase in revenue. Similar considerations apply to other carryings of minerals, even though some of them may be for other prosperous industries such as building.

With merchandise and livestock, where the railways meet with competition from the road haulier, and particularly from the "C"-licence vehicle, modernisation, including provision of efficient marshalling yards and fast goods trains between major centres, will enable the railways to compete effectively for many kinds of traffic. One should assume, Mr. Munby states, that in the near future some economic solution should be found for the transfer of goods from road to rail and *vice versa*, such as development of an efficient through system of freight traffic based on road at both ends with the long intermediate hauls by rail. So long as British Railways are competitive in their approach and sell their facilities with vigour, they should get some reasonable share of the merchandise traffic. He does not think that, even in the best conditions, "they can expect ever to carry the large bulk of the country's merchandise." Whatever happens, railways are likely to be highly important in Britain, but one cannot see them as the predominant freight carriers in the future unless a government deliberately forces traffic back on to the railways on the grounds of some social advantage not reflected in normal economic costs. The view cannot be over-emphasised, that what matters is how far they are able to sell their services to the public at the right price, and to convince the public that the services are of good quality.

The growth of the "C"-licence transport, he states, is the result largely of that of the distributive industries and of the desire of manufacturers for vehicles bearing their names, as advertisements. With the abolition of re-sale price maintenance, shops will not have the same incentive to provide delivery services whether customers are ready to pay for them or not, and the advertising value of a delivery van may be seriously affected by radical methods of dealing with traffic congestion in cities. Some of the growth of "C"-licences is due to the monopoly restrictions on the other licences and the upheavals through which the road haulage industry has gone in the last few years. If all sections of the haulage industry were allowed to compete in economic terms, then manufacturers would be in a position to decide whether they wanted to bear the costs of a private system of transport, taking account of the convenience this might offer for them. A fully commercial system of road haulage, in Mr. Munby's view, would involve the road hauliers in paying the proper costs of the roads they use and would involve the removal of licensing restrictions of practically every kind. Inland waterways and coastal shipping have depended very heavily on bulk traffics. The same reasons that suggest that railway carryings of this kind of freight will not expand very rapidly, might suggest the same about the future of water traffic of all kinds.

A rough calculation by the lecturer suggests that about 40 per cent of the total passenger-miles travelled in 1958 were by private car, 35 per cent by public road passenger services, and just over 20 per cent by rail. The continued expansion of private motoring is the one certain element in the future of passenger travel. Outside London, public road passenger services have slowly expanded since the war, but it looks as if 1955 marked the peak. The decline that can be traced since then has shown itself dramatically for many years in London, where both road and rail have been affected, and the same may happen to other cities in the near future, as it is indeed beginning to happen. The other sector where the motorcar has made serious inroads is in the countryside, where rural bus services go the same way as the branch line.

The fact that the passenger traffic of British Railways has been well maintained, better than Mr. Munby expected, is considered by him to reflect the fact that in the last few years fares have not kept pace with other prices and in particular with bus fares. It is not clear to him what justification there is for the B.T.C. estimate of a 15 per cent increase in passenger traffic by 1963, when coupled with an admission of the need for increased fares. He apparently overlooks the fact that only those fares, such as season ticket and other fares for business travel, are chosen for increase which the traffic can bear. The Regions of British Railways also have made and are making vigorous efforts to capture traffic by improving services, largely with the help of diesel and electric traction, and by quoting all manner of reduced fares. The population, moreover, and economic activity and prosperity may be expected to increase by 1963.

Hot-box Detectors in the U.S.A.

WITH the high temperatures, heavy axle-loads and fast speeds prevailing in American southern states it is not surprising that the incidence of hot axle-journals and -boxes is high. The problem is now being solved by the installation of hot-box detectors situated at strategic points beside the track and susceptible to any overheated box on a train passing at speed; they report the occurrence automatically to a controller or other operating officer.

Among the most recent installations is one on the 277-mile Clinchfield Railroad connecting Elkhorn City in West Virginia with Spartanburg in South Carolina; it crosses the Cumberland Mountains just south of Elkhorn City and the Great Smoky Mountains south of Johnson City. It is an entirely mineral and freight line, the principal traffic being coal carried southwards from Elkhorn City in an average of five 90-wagon trains a day. The line is worked on the C.T.C. system, the control centre being at Erwin, 135 miles south of Elkhorn City.

The first set of detectors was installed last October at a point 64 miles from the northern terminal and 71 miles from Erwin. There is one detector on each side of the line and if there is an overheated box on one side or the other it is picked up by the detector on that side. The heat signal imposed on the telephone lines is instantaneously transmitted from the detector to the control office at Erwin. Two separate Harmon F.M. carrier channels are provided, one reporting from each detector. The respective frequencies are 40 kcs. and 55 kcs.

Eight minutes before a train passes the detectors its approach

is announced to the controller by a buzzer and a red light; the buzzer can be switched off by him but the light remains on until the train clears the approach circuit in which the detectors are situated. Any abnormal temperature is indicated to the controller on a graph, and he arranges for the train to be stopped by a special signal five miles after it has passed the detectors and for a maintenance call-light to be switched on. The train crew answering the call is informed of the position on the train of the heated journal, and decides whether the vehicle involved must be cut off. During September, 20 wagons had to be cut out of trains at stations south of the detectors; in November the number was only 10. The number of journals subject to detection on an average day was 3,600, 1,800 by each detector. Two other sets of detectors are to be installed, one 50 miles south of Erwin and the other 30 miles north of Spartanburg.

British Transport Commission Traffic Receipts

IN view of the incidence of the Easter holiday in Period 4, the four weeks ended April 24, British Railways freight and parcels receipts for the period at £23,318,000 do not compare badly with £25,465,000 for the preceding four weeks. Mineral traffics at £3,662,000 were £457,000 more than for the corresponding period of last year. That was expected in the light of the increase in steel production—despite the reminder given last week by Mr. D. L. Munby, in his paper to the Royal Society of Arts, that a rise in mineral traffics to be expected from increased steel output is not as great in proportion as the latter. The decline in coal class traffic continued, though the drop of £177,000 compared with Period 4 of 1959 is not great.

The increase of £357,000 in merchandise receipts against the corresponding figure for last year is not particularly encouraging. At £7,645,000 they were less than the figure for Period 3 (£8,071,000), the result presumably of the Easter holiday. There are as yet few results, in the form of revenue for the whole undertaking, of the very active steps being taken by British Railways to win traffic.

Freight receipts from the road haulage, inland waterway, and shipping activities of the British Transport Commission were much the same for Period 4 as for the preceding four weeks.

	Four weeks to		Incr. or decr.	Aggregate for 16 weeks to		Incr. or decr.
	Apr. 24, 1960	Apr. 19, 1959		Apr. 24, 1960	Apr. 19, 1959	
Passengers—	£000	£000	£000	£000	£000	£000
British Railways ...	11,455	10,556	+ 899	38,808	36,063	+ 2,745
London Transport :						
Road passenger services ...	4,217	4,105	+ 112	16,867	16,036	+ 831
Railways ...	1,905	1,818	+ 87	7,762	7,328	+ 434
Provincial & Scottish buses ...	4,392	4,317	+ 75	16,715	16,335	+ 380
Ships	451	440	+ 11	1,075	1,121	− 46
Total passengers ...	22,420	21,236	+1,184	81,227	76,883	+ 4,344
Freight, Parcels & Mails						
British Railways—						
*Merchandise & livestock ...	7,645	7,288	+ 357	31,420	30,365	+ 1,055
*Minerals	3,662	3,205	+ 457	15,395	13,840	+ 1,555
*Coal and coke ...	7,869	8,046	− 177	36,673	37,957	− 1,284
*Parcels, etc., by coaching train ...	4,142	4,083	+ 59	16,301	16,063	+ 238
*Total freight, British Railways	23,318	22,622	+ 696	99,789	98,225	+ 1,564
Others†	4,223	4,017	+ 206	16,740	16,058	+ 682
Total freight, parcels & mails	27,541	26,639	+ 902	116,529	114,283	+ 2,246
Total	49,961	47,875	+2,086	197,756	191,166	+ 6,590

* Includes receipts from collection and delivery
† Inland waterways freight, road haulage, and ships

British Railways passenger traffic receipts slightly exceeded the 1959 figure and at £11,455,000 (which includes the Easter traffic) compare with £9,488,000 for the four weeks to March 27. Ships' passenger receipts at £451,000 slightly exceeded the corresponding traffics for last year, with the help, no doubt, of Easter travel to and from the Continent.

Total traffic receipts of the Commission for the 16 weeks ended April 24 at £197,756,000 were only £6,590,000 more than for the corresponding period of 1959—more than a quarter of the year.

PERCENTAGE VARIATION 1960 COMPARED WITH 1959

	Four weeks to April 24	Sixteen weeks to April 24
British Railways :		
Passengers	+ 8·5	+ 7·6
Parcels	+ 1·4	+ 1·4
Merchandise & livestock	+ 4·8	+ 3·4
Minerals	+14·2	+11·2
Coal and coke	− 2·1	− 3·3
Total	+ 4·8	+ 3·2
Ships (passengers)	+ 2·5	− 4·1
British Road Services, Inland Waterways & Ships (cargo)	+ 5·1	+ 4·2
Road Passenger Transport, Provincial & Scottish ...	+ 1·7	+ 2·2
London Transport :		
Railways	+ 4·7	+ 5·9
Road Services	+ 2·7	+ 5·1
Total	+ 3·3	+ 5·4
Aggregate	+ 4·3	+ 3·4

Letters to the Editor

(*The Editor is not responsible for opinions of correspondents*)

British Railways Main-line Diesel Working

May 6

SIR,—As a regular user of the St. Pancras—Manchester train service I have noticed over the past year or so that certain trains are worked by the new 1,200-h.p. diesel-electric locomotives in pairs. This came to my notice especially on May 5, when the 2.15 p.m. arrival and 2.25 p.m. departure were worked by different pairs of these locomotives, and caused me to wonder what the economics of this arrangement are.

If the cost of a 2,000-h.p. diesel locomotive is taken as a figure of 100, then the cost of the pair of 1,200 locomotives must be about 180, and maintenance costs of two locomotives, as against one, about double.

As the loads of the trains seem only just outside (if at all) the capacity of one 1,200-h.p. then why use two instead of one of slightly higher power, say 1,750 or 2,000 h.p. ? The 2,000-h.p. English Electric locomotives seem to handle from Kings Cross and Euston heavier trains than those from St. Pancras, with the greatest of ease.

Yours faithfully,

JOHN J. RIDGE

62, Courtleigh Gardens, N.W.11

Rail/Air Excursions to the Continent

April 28

SIR,—Mr. J. H. Brebner has rightly pointed out in your April 22 issue that there were day excursions to Le Touquet on Sundays before the war, and our joint (with British Railways) release did not perhaps make it completely clear that the claim of a "first" was for regular excursions (no-passport to Calais) to Ostend, Rotterdam, and Calais, with one combined return ticket for the rail and air journey. I enclose one of these tickets, which may interest your readers.

It is true that my Traffic Manager, Mr. G. P. Parselle, was on the staff of the Southern Railway, and his 17 years' experience there is a most valuable contribution to the transport experience of the senior executives of this Division of Air Charter Limited. However, although pre-war recollections may have played their part, it would be more appropriate for me to pay tribute to the ability, enthusiasm, and vision of the senior officials of the Eastern Region, who are constantly seeking ways of producing new traffic and revenue. This has ensured the success of the first phase of our combined efforts to link rail and air to the Continent for the vast numbers for whom Liverpool Street, Fenchurch Street, and Southend are cheaper and more convenient.

Yours faithfully,

D. A. WHYBROW
Manager

Channel Air Bridge,
21, Wigmore Street, W.1

[The cover and one coupon of an excursion ticket to Calais are reproduced in the Scrap Heap this week.—ED., *R.G.*]

THE SCRAP HEAP

Language Lessons for Commuters

The morning train is a tough place for learning anything. But the Norwegians are thinking of putting their journeys to good use. Loudspeakers may be installed in one early morning train so that travellers can learn English on their way to work. If this idea spreads we may yet hear a burble of French and German on the 7.58 from Orpington.—*From the "Evening News."*

Links with Casey Jones

Descendants of Casey Jones [who gave his life in 1900 in staying on the footplate to apply the brakes to minimise the effects of a collision] still work on the Illinois Central Railroad. His son, Charles B. Jones, is a pipe-fitter at Jackson, and Charles B. Jones, Junior, Casey's grandson, is a machinist at Fulton, Kentucky. Janie, his widow, died in 1958, and Sim Webb, his fireman, in 1957.—*Alan Jones in "The Guardian."*

Under Fire

Schoolboy marksmen of Epping brought a train to a halt with a cross-fire of airgun slugs. The three-coach 5.5 p.m. shuttle-service Epping to Ongar, Essex, Underground train had surfaced at Epping. A window in the first passenger compartment was shattered, and glass was scattered over the seats as the train left Epping Forest. None of the 14 passengers was injured. The train went on to Ongar, but there the driver and guard decided not to take it back to Epping.—*From the "Daily Mail."*

The Last of Steam

The May issue of the Swiss Federal Railways house journal gives the years in which some major railways in Western Europe hope to complete substitution of steam by electric or diesel traction. These are stated to be: Danish State, 1963; Luxembourg, 1963; Swedish State, 1965; Swiss Federal, 1965; Belgian National, 1968; Italian State, 1968; French National, 1970; Norwegian State, 1970; Austrian Federal, 1975; German Federal (Western Germany), about 1980; and British Railways, about 1985. The first major railway to dispense with steam operation was the Netherlands Railways, from which the last steam service was withdrawn at the beginning of 1958.

Singing in the Train

There are two strong drawbacks to singing on trains: the noise of the wheels and the rocking motion. In England there would be a third: the objections of passengers in other compartments, who would almost certainly complain to the guard, write indignant letters to the newspapers, and perhaps even be bold enough to protest in person to anyone so insane and un-British as to while away a train journey by singing madrigals. But on the Continent the madness of the English is taken for granted, anyway, and our singing probably did little to affect the English reputation one way or another. We countered the wheel noise by singing with the window shut, flinging it open at the end of each piece, and we soon learnt to cope with the jolting and swaying of the train by jolting and swaying with it. . . . The station was our rendezvous at every town . . . and we had several meals in station restaurants (where, happily, the self-service counter has not yet usurped Herr Ober). In the restaurant at Stuttgart station we were much impressed to see a quotation from Schiller's "Ode to Joy" painted on the wall; one would have to go far, we felt, before discovering a British Railways station buffet whose walls were adorned with lines from Shakespeare, or any other poet, for that matter.—*From "The Times."*

Succour by the "Signalboxman"

When the 6.32 p.m. train from Barrow stopped at Drigg, London Midland Region, British Railways, on March 23, two Swedish passengers alighted to find that they had left the train at the wrong station. Their destination, Seascale, was two miles farther along the line. The signalman on duty at Seascale, E. B. Mallinson, arranged transport for them and saw them safely on their way. He considered this as part of his day's work and thought no more of it. Recently a postcard from Sundsvall arrived at Drigg Station addressed to "The Signalboxman, Driggs Railway Station, Driggs, Cumberland, England." Signed by the two Swedish visitors, it read: "Dear Sir, For all the kindness you showed to us during our unintentional visit to Driggs railway station on March 23, we both thank you very much."

Rail/Air Continental Excursion Ticket

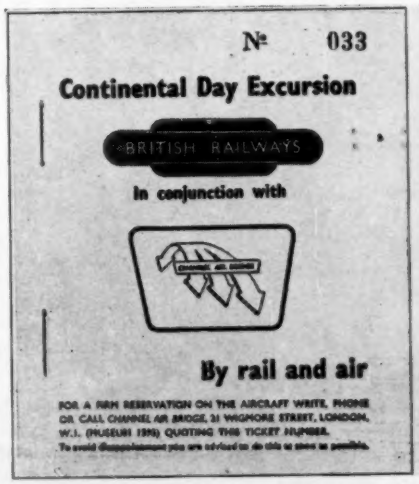
British Railways, Eastern Region, and Channel Air Bridge, a Division of Air Charter Limited, are issuing "book" tickets, with separate coupons for the outward and return rail and air sections of the journey, for the combined rail and air excursions from Liverpool Street, Fenchurch Street, and principal stations in Essex to the Continent *via* Southend Airport. The illustrations show the neat design of the cover and the pleasing layout of the outwards air coupon of a return, no-passport excursion ticket from Liverpool Street to Calais. These facilities are the subject of a letter on page 562 from Mr. D. A. Whybrow, Manager of Channel Air Bridge.

Wedding Fever?

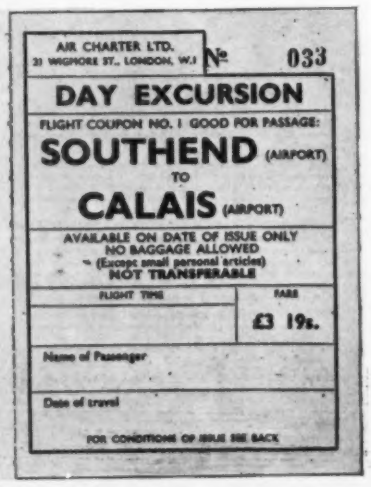
Signs of wedding fever on the British Railways: On the booking hall of Elstree Station is this notice: "Wedding of Princess Margaret. Owing to the above, the 12.20 a.m. from Luton to St. Pancras will run on the night of May 6."—*From "The Londoner's Diary" in the "Evening Standard."*

Railway Garden of Eden?

A team of Australian girls will travel in express trains throughout Britain on May 17, the first day of Australian Apple Week. They will walk along the corridors and present passengers with an apple or pear *en route*. The girls will wear Australian gold sashes over their dresses and the baskets in which they are to carry their gift apples and pears will be decorated with apple blossom. Boxes of fruit are to be stored on the train at the start of the journey and each girl hopes to be able to cover the entire length of the express in which she is working. An Australian "Apple Breakfast" is to be held at the Great Western Royal Hotel, Paddington, at 9.15 a.m. on May 17. The trains in which the girls will present their gifts include the "Cornish Riviera," "Atlantic Coast Express," "Bristolian," "Red Dragon," "Flying Scotsman," "Norfolkman," "East Anglian," and "White Rose," besides expresses to the Midlands. The presentations mark the start of the United Kingdom marketing season of Australian apples and pears.



Cover of no-passport excursion ticket



Good layout of flight coupon

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Hire of Locomotives

Rhodesia Railways is to assist Nyasaland Railways by sending it three "10th Class" locomotives. The locomotives will be on hire for about six months. They have a 4-8-2 wheel arrangement and in full working order weigh 120 tons including the tender. They are all over 30 years old and have been shedded in Bulawayo for some time.

NEW ZEALAND

Fluorescent Paint on Railcars

A recommendation that fluorescent paint lit up with ultra-violet lights should be used to paint railcars is to be made to the Railways Department by the Automobile Association, which considers that there are too many railcar crossing accidents in New Zealand, despite warning signals and the use of headlights.

New Ballast Plant

The New Zealand Railways new £100,000 quarry at Papatoetoe is now in use. It is estimated that the quarry will yield 20,000,000 yd. of metal at its present 30-ft. depth. This is enough for the next 50 years. Construction began on the site early last year. All the metal, taken from the high-quality bluestone, will be used for ballast beneath railway lines. The plant is fully automatic, and breaks ton blocks down to the chips commonly used for ballast. The stone is broken down in three stages, passing through crushers linked by endless elevators. The main stockpile contains 3,000 yd, of ballast. It is built over an artificial tunnel equipped with automatic trap-door chutes in its ceiling. Railway wagons will run underneath and loading will be at the rate of 40 wagons every 20 min.

Car Parks at Stations

The Wellington Regional Planning Authority has decided that the responsibility of providing motor parking areas at railway stations belongs to the Railways Department. The Authority expressed the view that in many instances there was land belonging to the department at stations which could be made available for parking. This land, in most instances, was not being used for anything else.

Train Heating Vans

Mr. M. Moohan, the Minister of Railways, has announced that special heating vans will enable the "Night Limited" express to cut at least an hour from the present Wellington-Auckland time. Mr. Moohan said that he was ordering the special vans to be built so that diesel locomotives could be used on the run. The vans would carry equipment to heat the trains. The present diesel locomotives ordered primarily for freight service, were not equipped with steam-heating equipment. In spite of the need to provide special heating vans, diesel haulage would offer significant savings in operating costs, compared with the cost of running oil-fired steam locomotives now employed. He also stated that a Railways Department officer was overseas examining latest developments in diesel locomotive and passenger train equipment. Other officers were shortly to examine light passenger coaches being built and used in Australia.

Hot-metal ladle car of 90-ton capacity, built by Head Wrightson Teesdale Limited for Durgapur Steelworks

VIET-NAM

Saigon-Hué Line Through Services

Through communication was restored recently between Saigon and Hué, in South Viet-Nam, on completion of the work of restoration of the central part of the route, which was damaged by Allied bombardment during the Japanese occupation in the war of 1941-45, and many sections were systematically demolished during the post-war civil disturbances and in the civil war which ended in 1954. A daily passenger train between Saigon and Hué, including *couchettes* and a restaurant car, was stated recently to cover the 645 miles in 29 hr. northbound and 24 hr. southbound. Speed has been restricted until the restored formation and track have settled down. The management of the Viet-Nam Railways is considering electrification of the line to Talat after completion of hydro-electric supply works. Diesel traction is envisaged for other lines. Six Alsthom 850-h.p. diesel-electric locomotives have been procured with French economic assistance, and further diesel-electric power is to be purchased with a loan of $6,000,000 from the U.S.A. As a temporary measure some steam locomotives are being converted to burn oil.

INDIA

Rolling Stock for Durgapur Steelworks

Head Wrightson Teesdale Limited, a subsidiary of Head Wrightson & Co. Ltd., is supplying a large quantity of special-duty rolling stock for the Durgapur Steelworks. Head Wrightson is a member of ISCON, the British consortium building the steelworks, and the wagon contract represents only part of the contribution to this project made by the company. A total of 120 wagons of many types, all designed and manufactured at the Head Wrightson works at Thornaby-on-Tees, will be used to transport over 4,000,000 tons of raw materials for the blast furnaces each year. Among the special wagons sent to India are hot metal ladle cars, pig iron carriers, skip cars and those for transporting ore, dust and slag.

UNITED STATES

Merger of Three C.P.R. Subsidiaries

On March 15 the boards of directors of three railways, the Minneapolis, St. Paul & Sault Ste Marie, the Wisconsin Central, and the Duluth South Shore & Atlantic Railroads approved the merging of their three properties to be known collectively as the Soo Line. Unification is expected to result in savings, additional financial and competitive strength, and improved

administrative and operating efficiency. The M. St. P. & S. Ste. M. RR. has hitherto been known as the Soo Line, and the W.C.RR. is a subsidiary of it; their combined route-length is 4,186 miles, both being subsidiaries of the C.P.R. The D.S.S. & A.RR. is also a C.P.R. subsidiary 555 miles in length, so that the new Soo Line has a length of 4,741 route-miles.

CANADA

End of Steam on C.N.R.

The last steam locomotive on the Canadian National Railways was withdrawn from service last month. It was No. 6043, of the 4–8–2 type, built in 1929 by the Canadian Locomotive Company at Kingston, Ontario. The C.N.R. is the first railway in Canada to convert to complete diesel traction. It now has in service 2,144 diesel locomotives and 28 railcars.

SWITZERLAND

Motorcars through Tunnels

Easter, 1960, saw the first use of the new facilities for conveying motorcars through the Simplon Tunnel, between Brigue and Iselle only, instead of, as formerly, from Brigue through to Domodossola and back. The fact that this Easter the Simplon Pass road was open to traffic reduced the number of cars making use of the facility, but even so, about 1,500 cars were carried through the tunnel during the week-end. The motorcar trains are worked by a converted motorcoach of the Be 4/6 type, and at the other end a coach with driving compartment formerly used in the Zurich suburban service.

The Gotthard Pass was closed during Easter by snow conditions, and 15,000 motorcars and cycles were moved through the Gotthard Tunnel during the week-end. Two complete trains were in use for private cars, one for industrial vehicles, and one for motor bicycles and scooters. A notable acceleration in the handling, as compared with previous years, was made possible by the improved facilities at Göschenen and Airolo.

FRANCE

Under-water Cable at Caronte

The S.N.C.F. signalling cables on the bed of the Berre, alongside the Caronte Etang de bridge which carries the Miramas–L'Estaque line over the canal, were damaged by the anchor of a ship, and it was decided to replace them. Use was made of the special system patented by the Alnwick–Harmstorf Company of Hamburg, which involves the use of a high-pressure water jet operating on the river or sea bed, and controlled from a surface vessel, to remove spoil temporarily from a trench into which a plastic pipe, containing a steel wire, is sunk. The spoil then returns to cover the pipe, and, by means of the wire, a cable can be pulled across the water through the pipe. This system not only provides a high degree of security and long life, but makes it possible to change the cable if necessary. At Caronte, six polythene pipes, with an exterior diameter of 3½ in., were sunk to a minimum depth of 11 ft. 6 in. below the bed of the lake. Each pipe was subsequently used for four cross-water cables.

DENMARK

Underground Expansion Plan

A Bill to build three completely new underground railway lines from Central Copenhagen to the northern, southern and western suburbs, at a cost of some Kr. 1,500 million, has been placed before Parliament by Mr. Kai Lindburg. This new system, which would treble the city's underground communications, may be started before the end of the year and will call for the import of large quantities of earth-moving, tunnelling, and other machinery and equipment. Completion of the project is expected to take six or seven years. No further mention is reported of the line under the Sound.

U.S.S.R.

Moscow Monorail Plans

According to Moscow Radio, working designs have been prepared for a monorail electric railway to operate on four routes in Moscow.

Publications Received

Main Lines across the Border. By O. S. Nock and Eric Treacy. Edinburgh: Thomas Nelson & Sons Ltd., Parkside Works. 9½ in. × 6½ in. 155 pp. plus 63 pp. illustrations. Price 25s.—The authors have set the southern limits of their territory at Lancaster, Settle, and Newcastle, on the West Coast, Midland, and East Coast routes respectively. In Scotland, the Caledonian line is considered as far north as Carstairs, and the Glasgow & South Western as far as Kilmarnock, but on the East Coast and Waverley routes the story is carried through to Edinburgh. The topographical features, gradients, and chief engineering works are described in separate chapters followed by a detailed consideration of locomotive performance, for much of which Mr. Nock has drawn on his own carefully-compiled records. The illustrations, of a high standard, depict a variety of locomotives on passenger and goods services.

The Politics of Railroad Co-ordination, 1933-1936. By Earl Latham. Cambridge, Massachusetts: Harvard University Press; London: Oxford University Press, Amen House, Warwick Square, E.C.1. 9½ in. × 6 in. 338 pp. Price 52s.—This book gives in detail, and with that profusion of annotations associated with some U.S.A academic productions, the story of Joseph B. Eastman's work as Federal Co-ordinator of Transportation. Eastman was a member of the Interstate Commerce Commission from 1919 until his death on March 15, 1944, and deserves to be remembered for his decisive and lasting influence upon the practice and administrative law of the I.C.C. In the early days of the New Deal, President Roosevelt gave Eastman the newly-created post of Federal Co-ordinator (he was the only occupant) so that he might "get the railroads to work together for their self-betterment." He failed. Mr. Latham, with the help of papers in the Joseph B. Eastman Foundation of Amherst College, where he is Professor of Political Science, explains the failure from the Eastman viewpoint. Eastman's scheme of nationalisation, under a Federal corporation called United States Railways (*sic*), is of more than historical interest. The proposal rallied forces of opposition which killed the office of Federal Co-ordinator. The latter, while it lasted, was responsible for much valuable research work. Eastman believed that the U.S.A. would not "come to public ownership and operation unless and until the railroads cease to be an attractive field for the investment of private capital." In this he will probably prove to be correct.

Current Collection.—A leaflet describing Morganite carbon current collectors for contact with wire and bar conductors as used for overhead travelling cranes and other mobile plant relying on mains electricity supply. The main advantage over a metal collector is the increased life given to the conductor as the graphite particles work in to form a highly polished skin. The leaflet describes how this eliminates abrasion and sparking so minimising radio and television interference. Standard sizes of collectors are listed with current ratings and recommended mechanical arrangements. There are notes on methods of conductor suspension and treatment to obtain the most economical results. Copies may be obtained from the Morgan Crucible Co., Ltd., Battersea Church Road, London, S.W.11.

Engineers' Brasswork.—A 142-page reference catalogue describing the range of engineers' brasswork produced by Peglers Limited supersedes the last edition produced in 1954. It should prove a valuable source of reference for all engineers concerned with the specification and provision of control fittings on steam, oil, air, and water pipe lines. Separate sections deal with radiator fittings, globe valves, check valves, gate valves, plug and gland cocks and test and gauge cocks; each is fully described with dimensioned drawings. A wealth of general data is also included, such as extracts from British Standards, temperature and other conversion tables, and a description of metals used in the production of fittings. Copies may be obtained from Peglers Limited, Prestex House, Marshalsea Road, London, S.E.1.

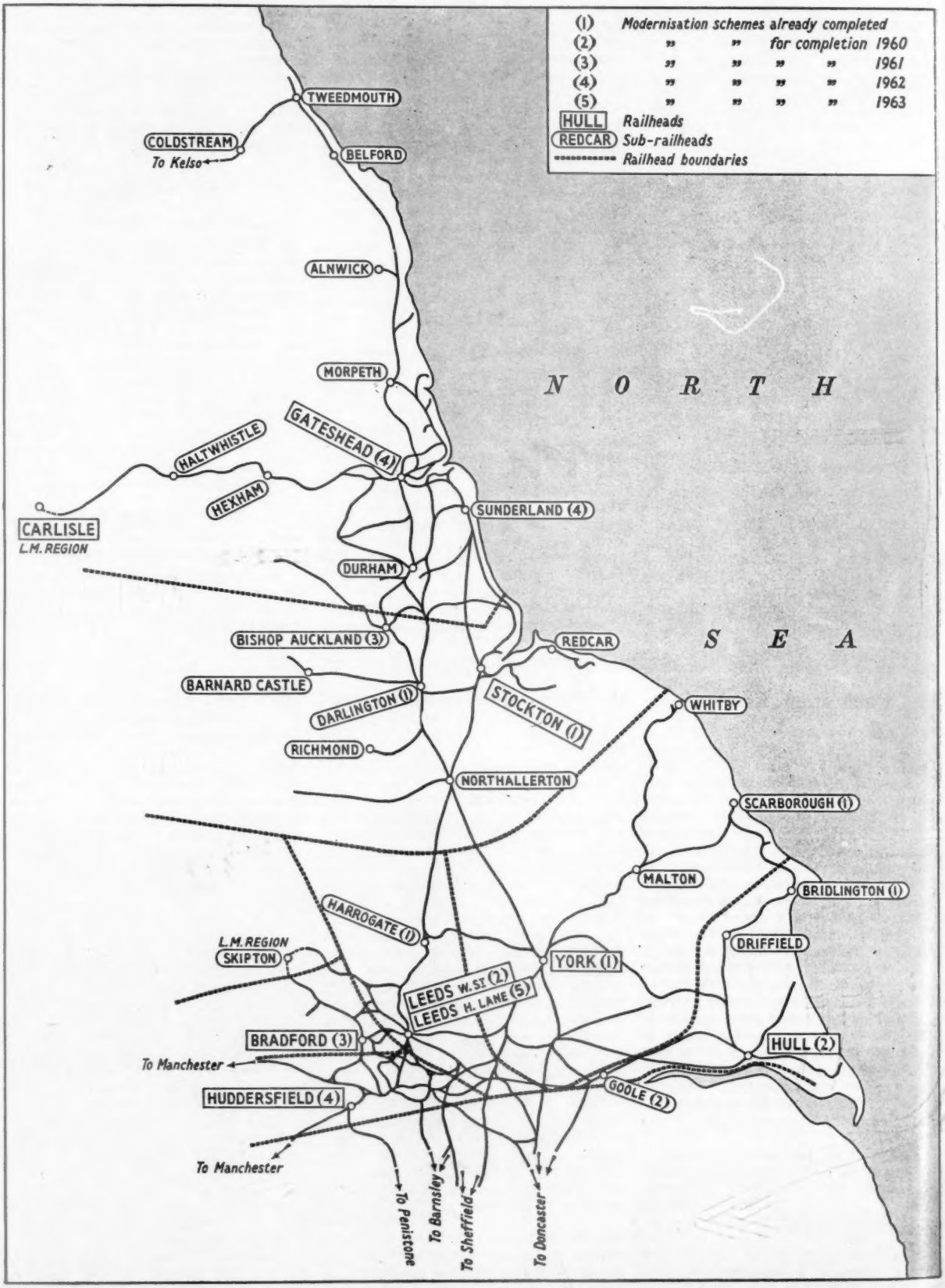


Diagram illustrating the modernisation of freight terminals now in progress on the North Eastern Region, showing schemes in hand or already complete, railheads, sub-railheads, and railhead boundaries

North Eastern Region : Modernisation of Freight Terminals

Concentration of all classes of traffic on large depots and integrated road transport will improve freight services and enable the Region to close many small depots

By K. E. Thurgood
Terminals Planning Assistant,
Traffic Headquarters, North Eastern Region, York

THE North Eastern Region of British Railways covers about 8,000 square miles, stretching from Berwick in the North almost to Doncaster in the South. Before nationalisation in 1948 this area was served by the London & North Eastern and London Midland & Scottish Railway Companies, and immediately before the railway amalgamations in 1921 by the following companies:—

North Eastern,
Great Northern,
Great Central,
Midland,
London & North Eastern,
Lancashire & Yorkshire,
Hull & Barnsley,
North British.

All these original companies served parts of the Region, and in some areas, particularly in the West Riding, there was duplication of services. Now all are controlled by a single administration and some facilities have been reorganised and streamlined. Much remains to be done.

Although most of the general merchandise and minerals traffic in the Region is dealt with at private sidings, many tons are handled at the rail terminals. In 1958 the freight traffic handled by B.T.C. staff at the depots totalled about 3½ million tons, of which 45 per cent consisted of Sundries, 46 per cent was full loads and 9 per cent was warehouse traffic.

The whole Region is being examined to find out where it is possible to concentrate all classes of traffic on the larger depots, and radiate from these with road motor vehicles, and close small depots. Increased efficiency will result from the concentration of traffic and the modern handling equipment for which this will provide scope.

Concentration on Large Depots

Over 700 freight depots, mostly dealing with Sundries, full loads, warehouse traffic, and coal, have been reduced to 611 by closures of branch lines or individual depots. Most of these depots now only deal with full loads, warehouse traffic, and coal. Those dealing with Sundries (traffic comprising consignments averaging three packages of approximately 60 lb. each) have been reduced to 88 by concentration on the larger depots and extensions of road collection and delivery services. Depots sited a few miles apart from each other were a relic of the days of horse cartage.

Further concentrations of Sundries are not possible without modernisation of the large depots but, when present plans are implemented, the total number of Sundries depots will be reduced to 29, of which seven constitute main centres. The remaining 22 depots are too far from the main centres for road haulage to be economical, and will continue to be served by rail.

It is expected, therefore, that most of Sundries loaded to and from the Region eventually will be in through-wagons, and the amount requiring transhipment will be kept to the absolute minimum. Efficiency will be improved, and handling costs and claims for damages will be reduced.

Prewar Nationalisation

Up to the last war the only depot in the Region which had been modernised was Keighley—in 1935 the shed decks were removed and 30-cwt. electrically-powered units introduced to deal with Received Sundries. Forwarded traffic was dealt with by "direct loading." Under this system, collection units perambulate their loads alongside the stand wagons to which the traffic is loaded direct, instead of being barrowed over shed decks.

The only other North Eastern depot to be modernised before the modernisation plan was launched in 1955 was Scarborough. Here, in 1947, a slat conveyor was installed to deal with Received Sundries, and the decks were removed to enable forwarded traffic to be dealt with by "direct loading." At that time all goods sheds except Keighley and Scarborough had been virtually unaltered since their erection 80 to 100 years previously.

The seven main centres serving the Region, either by road or rail, are in the main industrial and most heavily-populated areas—Gateshead, Stockton-on-Tees, York, Hull, Leeds, Bradford, and Huddersfield. They are also conveniently placed for the proposed new marshalling yards.

In planning modernisation for these centres the first consideration in each case was to determine the area to be served by road or rail and to establish what accommodation for wagon and road vehicles was required. Existing depots and goods sheds were examined to see whether adaptation was possible or whether complete re-building would be required.

There is no one ideal layout for large depots. Each must be studied individually in relation to comparative tonnages in the various sections of traffic and to existing layout.

Below is an outline of the present position of these main centres, and a brief description of what has been done or is proposed for their modernisation.

i. *York*

Although the goods shed at York was in good condition, its layout made it unsuitable for any method of working which did not involve the use of decks. In 1957 these were strengthened, and seven fork-lift trucks with shortened masts and 100 semi-live stillages were introduced so that the whole of the traffic could be dealt with in unit loads.

ii. *Stockton*

Stockton depot serves part of the Tees-side area by road vehicles, and the rest through smaller depots connected by rail. The latter depots include Middlesbrough, only four miles away, and as a great deal of the traffic to and from this depot is transhipped at Stockton, modernisation has provided for direct road services to and from Middlesbrough and the closure of Middlesbrough goods shed.

The goods shed was modernised to deal with only Received and Tranship traffic by electric platform trucks, and a new shed was erected alongside to deal with Forwarded traffic by "direct loading." By these means it was possible to absorb Middlesbrough traffic. Efficiency increased and working costs, previously high, were reduced.

iii. *Hull*

Sundries at Hull are dealt with at two depots—Received at Railway Street and Forwarded at English Street.

Railway Street shed is just over 100 years old and the traffic is dealt with on ordinary hand barrows over island decks. English Street is of more recent construction and contains decks over which traffic moves on hand barrows. Some is also dealt with in the open yard.

Both sheds are expensive to operate, partly because of the transfer of traffic which must take place between them.

Amalgamation at English Street

A scheme was authorised last year under which Received and Forwarded traffics will be amalgamated and dealt with at English Street.

The decks from English Street shed will be removed to provide facilities to deal with all Forwarded traffic by "direct loading" under cover. A new shed will be built alongside to deal with Received town traffic on a slat conveyor and the whole will be served by overhead gantry crane for heavy and awkward traffics.

A separate deck will be provided for Shipping Sundries requiring pre-sorting before delivery to shipping berths in the docks. A 20-cwt. electric mobile crane and a 20-cwt. fork-lift truck with crane

Fork-lift truck with shortened mast conveying semi-live stillage at York

attachment will deal with heavy traffic on the Shipping Sundries deck and in the forwarded shed. Four Scott electric tractors of special design will haul internal vehicles round the wagons in the forwarded shed.

It is expected that the complete scheme will be implemented during the second half of 1960.

The Railway Street site will be adapted for use as a full-load depot. This course will enable the Region to dispose of the larger part of Neptune Street Depot.

iv. *Newcastle*

A considerable amount of Sundries is dealt with in the Tyneside area, the main centre for which is Gateshead. Because of the limitations of the goods shed at this point only a small area is served by road vehicles, and the remainder, including Newcastle, by rail.

Preliminary examination showed that any modernisation should include facilities to enable the areas now covered by Gateshead, Newcastle, and 10 other smaller depots to be served in future direct by road transport.

At first, it was thought that Newcastle Forth Shed should be adapted so that all traffic could be dealt with by electric platform trucks, but Forth Shed is 88 years old and built on a curve. There are a large number of roof-supporting pillars, and cellars underlie the entire area. The proposal also included the re-laying of Newcastle New Bridge Street Depot to deal with the bulk of Full-Load and Storage traffic for the Tyneside area.

Lamesley Development

A scheme was recently authorised for a new marshalling yard at Lamesley just south of Gateshead. Under the scheme, Gateshead Park Lane marshalling yard is to be abandoned. There is enough room here for a new modern goods shed and yard to deal with all sundries and Full-Load traffics. The existing shed at Gateshead can be converted into a storage warehouse. A scheme incorporating these proposals is now being prepared for authorisation this year.

The scheme will considerably improve service, reduce working costs and make valuable sites available for sale at Newcastle Forth and New Bridge Street Depots.

v. *West Riding*

The West Riding area is at present being served for Sundries traffic through three depots at Leeds, two at Bradford, and by single depots at Halifax, Huddersfield, Wakefield, and several other points. The zonal centre is Leeds, where much traffic is transhipped for the other depots.

Slat conveyor for Received traffic at Darlington

Modernised shed at Stockton, where Received traffic is dealt with by electric platform trucks

It is hoped eventually to concentrate all the traffic for this area on the three depots of Leeds, Bradford, Huddersfield respectively. Each would be self- supporting inasmuch as it would have sufficient traffic to have through loadings to and from other main centres in the country. There will thus be vastly improved service, a saving in working costs and a considerable reduction in wagon usage.

vi. Bradford

Sundries traffic for Bradford and the surrounding area is at present being dealt with through Valley and Bridge Street depots. Under a recently authorised scheme, Valley Depot is to be modernised to absorb the traffic from Bridge Street, which will be closed.

Structural Alterations

The scheme involves structural alterations to the existing goods shed for this to deal only with received traffic by electric platform trucks, and the provision of a new shed to deal with all forwarded traffic by " direct loading."

This will enable all traffic to be handled by a single cartage establishment instead of two, thus giving better service to traders. There will be considerable financial savings and the valuable Bridge Street site in the heart of Bradford will become available for sale. It is expected that the scheme will become operative in 1961.

vii. Huddersfield

A scheme is being prepared for the erection of a new goods shed in Newtown Yard Depot to handle the Sundries traffic at present dealt with at Huddersfield, Halifax, Wakefield, and several smaller depots. The traffic will be carted by road over a fairly wide area, and although this will increase cartage costs there will be economies in other directions. At the same time wagon-to-wagon transhipment will be avoided at Leeds on a considerable quantity of traffic and a much improved service given.

It is expected that the schemes will be authorised early in 1960 and fully implemented by 1962.

viii. Leeds

Forwarded and received Sundries traffic is now being dealt with at Hunslet Lane and Wellington Street, and forwarded traffic only at Hunslet East.

At each of the two last mentioned depots about half of the forwarded traffic is handled under cover by hand barrows over decks, and the remainder is dealt with by " direct loading " in the open yard.

A scheme was authorised early in 1959 for the erection of a new forwarded shed at Wellington Street to deal with all the forwarded traffic from these two depots under cover by " direct loading." This will simplify the cartage arrangements and give a more efficient service to traders. Structural alterations have already begun and it is hoped to introduce the new

One of three roadways in the new Outward shed of the modernised freight depot at Stockton

Modernised Outward shed at Hull Railway Street

working in June, 1960. This will mean that all Sundries to and from Leeds, as well as a considerable amount of transhipment traffic, will be dealt with at two depots only, i.e., Hunslet Lane and Wellington Street.

The modernisation schemes for Bradford Valley and Huddersfield will eventually absorb the traffic from the surrounding depots. This, coupled with the extension of the Leeds cartage boundaries, should almost entirely eliminate the considerable transhipment traffic through the Leeds depots.

Decreased Transhipment Traffic

Under present arrangements, at least two terminals for sundries are required at Leeds to provide adequate rail services. When the proposed new marshalling yard is completed at Stourton in 1964, it should be possible to provide an adequate service into one depot to and from all parts of the country. Then, with virtually no transhipment traffic through Leeds, all remaining traffic can be concentrated at one depot. Inquiries are being made to this end and, if the proposal is found practicable, it should lead to a considerable improvement in services and to the closure of one or more of the Leeds depots.

Small and Medium-Size Depots

Of the 22 small and medium-size depots proposed for retention for Sundries, only six justify expenditure on modernisation. Brief comments on these follow.

Darlington

In 1956, a conveyor was introduced at Darlington for Received traffic, and facilities provided to deal with Forwarded traffic by "direct loading."

Bridlington, Harrogate, Goole, and Bishop Auckland

Similar alterations are proposed at Bridlington, Harrogate, Goole and Bishop Auckland, i.e., small narrow decks for Received, and direct loading for Forwarded traffics. Such alterations were carried out at Bridlington and Harrogate in 1957, and are expected to follow very shortly at Goole and Bishop Auckland.

Sunderland

A scheme for Sunderland has still to be developed.

New methods of working and equipment have been included in all the modernisation schemes already authorised, but the aim is to employ even more modern techniques in those still in the planning stage.

It will be seen that the Region's proposals in the Sundries field are very far-reaching. Their full benefits are expected to be felt by 1965. These can be briefly summarised thus :—

i. A much better service for traders because of
   (*a*) speedier transits
   (*b*) reduction in claims potential
ii. Overall reduction in traffic and engineering costs
iii. Closure of a number of large and small depots or goods sheds
iv. Considerable reduction in wagon usage.

Full Wagon Loads

The foregoing proposals for dealing with Sundries traffic indicate how it will be concentrated on a few modern goods sheds. This traffic (averaging approximately 200 lb. per consignment) involves a considerable amount of sorting, and requires covered sheds.

Full-load traffic requires no sorting, and can, therefore, be dealt with direct from wagon to road vehicle or *vice versa*, cover only being provided in exceptional circumstances. As in the case of Sundries, the aim is to reduce the number of depots dealing with Full-Load and Mineral traffic, give an improved service, and reduce operating costs. Wherever possible, full loads will be concentrated on the same sites as Sundries.

Full-load areas of new terminals will have adequate wagon and cartroad accommodation. Separate sections are being provided for manually-handled traffic, heavy traffic requiring the use of cranes, tipping, side and end-on dock traffic, and palletised traffic, where justified.

Although this class of traffic has only to be handled over a comparatively short distance there is still scope for modern mechanical aids. These are continually being introduced to reduce handling costs and physical effort.

Heavy traffic will be handled by modern mobile and gantry cranes and heavy-duty fork-lift trucks. Light-capacity fork-lift trucks with special attachments are also being introduced for palletised and other traffics.

Continuous thought is being given to the design of containers and demountable bodies to cater for special traffics.

Concentration of mineral class traffic gives greater scope for the introduction of facilities for the economical handling of coal, such as coal drops, grabbing cranes, etc. Provision of coal storage accommodation to meet customers' requirements is also included in any new depot.

There is a fairly heavy demand on the Region for warehousing facilities, particularly at the large centres, and this will grow as smaller depots close.

This position is being met by (*a*) the use of goods sheds made redundant under the modernisation programme, and (*b*) the introduction wherever possible of palletised working with fork-lift trucks for economical use of space.

Modern lifting equipment—elevators, cranes, lifts, etc.—is being installed where needed.

The concentration of traffics on fewer depots naturally means a considerable increase in the carriage distances for road vehicles. Revised cartage arrangements are therefore being studied with the aim of replacing some of the present vehicles by others more suited to the altered working.

Rail Services

Whatever is done in the way of modernisation at the freight terminals is dependent on them being linked by country-wide fast freight rail services, and much has already been done in the North Eastern Region toward this end.

Some 575 fully-fitted express freight trains originate each week in the Region, serving all parts of the country and giving a next-morning arrival to a large number of cities and towns. The present schedule of services broadly covers the following areas:—

From	To
Newcastle, Sunderland, Darlington Tees-side, York, Leeds, Bradford	Eastern Counties, London, Banbury & Woodford, Manchester, Liverpool, Birmingham, Bristol & Cardiff

and from the same originating points to Edinburgh and Glasgow direct via either East or West Coast routes.

All important centres in the Region are already connected by fully-fitted services giving a next-morning arrival in every case.

Additional fast freight trains are continually being introduced, and it is the ultimate aim to cover the whole of British Railways by similar services.

Road Vehicle Maintenance in Scottish Region

Well-equipped workshops at Kilbernie Street, Glasgow, with under-floor steam heating, for complete rebuilding of vehicles

THE Scottish Region of British Railways operates some 1,600 road vehicles and 3,200 trailers, about half of them in the Glasgow area. Inspection and maintenance of vehicles in the Glasgow area, and major overhauls of all vehicles in the Scottish Region, are carried out in the Kilbernie Street workshops, Glasgow.

Complete Overhaul

The depot is an example of the organisation, methods, and equipment needed for complete maintenance of a large fleet of mixed vehicles. Besides the road vehicles, mobile crane chassis and other plant are overhauled and serviced. Working conditions are good. Establishment of standard times for all repair jobs enables an incentive bonus scheme to be operated. All vehicles are inspected on an eight-week cycle, repainting is carried out every two years, and major overhauls every five years.

The floor area, including accommodation for staff, is 320 ft. x 190 ft. As shown on the floor plan the workshop area is divided into sections: vehicle washing; inspection and running repair; heavy repair and overhaul; servicing; sheet metal; body repair; paint shop; repair of private motorcars; stripping and degreasing; engine and unit overhaul; electrical and ancillary components; tyre repair; and stores.

Steam Floor Heating

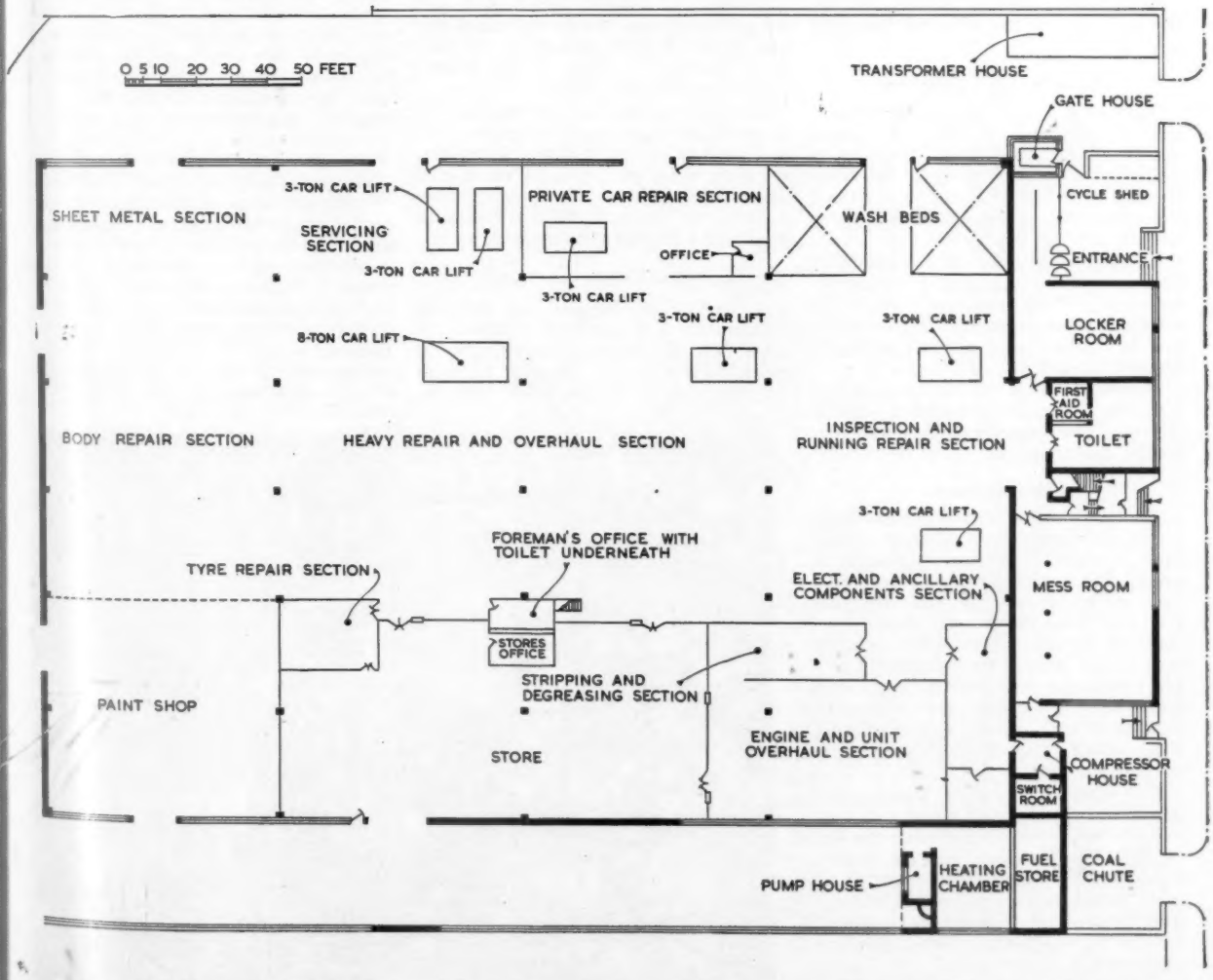
The central floor area is clear of partitions to allow free movement of vehicles between sections, and to give flexibility to vary the intake of light or heavy work as required. In this area portable benches are used. Supply points for compressed air, power, and low voltage lighting are attached to the main pillars.

Automatic Heating Control

Central heating is by three solid-fuel boilers, with bunker-fed mechanical stokers, thermostatically controlled. A distinctive feature is the use of panel floor heating by hot water circulating pipes. These are covered with asbestos cement sleeves embedded in the concrete floor slabs. The uniform heating obtained is extremely efficient.

In addition, each roller shutter door is served by an overhead unit heater, which automatically discharges downwards a flow of heated air when the roller shutters are raised.

General illumination of the workshop



Layout of Road Motor Engineer's Workshops at Kilbernie Street, Glasgow, Scottish Region. The central floor area is clear of partitions to allow free movement of vehicles between sections

Electrically-operated lifts and automatic oil drain units

is by fluorescent lighting. Individual lights are provided on the work-benches and machines.

Sequence of Operations

On arrival at the depot all vehicles pass through the washing bay, which accommodates 10 vehicles. Cleaning is performed without brushing by two high-pressure guns. The section is enclosed by metal and glass partitions, water draining through floor grilles.

Washing is followed by a preliminary examination in the running repair section to determine the section to which the vehicle is to be allocated. If it is to be held in the workshop a relief vehicle is released for traffic.

The light repair section is equipped with two electrically-operated vehicle lifts of 3-ton capacity and several hydraulic trolley jacks.

Heavy Repairs

The heavy repair section deals with all major overhauls, and extensive repair work resulting from street accidents or major component failures. Lifting equipment in this section includes one 3-ton and one 8-ton electrically-operated vehicle lifts, portable gantry hoists, portable floor cranes, and hydraulic trolley jacks. The private car repair section deals with the inspection, overhaul, and repair of all motorcars and motor cycles. Equipment includes car lift and high-pressure greasing equipment.

Each week 10 engines, 12 clutches and gearboxes, and a small number of rear axle assemblies are normally overhauled.

Engines are stripped and thoroughly degreased in pressure spray tanks, using cold Solvex detergent. Complete assemblies are kept together and inspected for worn or defective parts. Replacements required are drawn from stores by the inspector and a complete set of parts placed on a wheeled trolley ready for rebuilding.

Transfer of heavy components and assemblies between the stores, degreasing, and engine rebuild sections is by overhead runways. Lifting is by Morris 10-cwt. electric hoist blocks.

Rotatable stands are provided for the assembly of engines, and the shop is well equipped with power tools for re-conditioning valve gear, cylinder liners, and crankshaft bearings. Assembly presses include a Laycock 60-ton hydraulic press and a Skyhi 16-ton sleeving press.

Petrol Engine Servicing

A section is equipped for servicing carburettor and ignition systems, as most Scottish Region road vehicles at present are petrol-driven, and the small amount of servicing for diesel injection is carried out for the road vehicle workshop in nearby railway shops.

The electrical section is fully equipped for the overhaul, repair, and testing of starter motors, dynamos, magneto and coil ignition equipment, petrol pumps, and carburettors for all Scottish Region vehicles. Seats are provided for all bench work. Westalite chargers are used for battery charging.

Body Repairs and Painting

The amount of body repair work handled by the depot is considerable. It ranges from damaged wings and cabs to complete rebuilds. This involves staff and equipment for both timber and sheet metal work, including gas and electric arc welding.

The sheet metal section undertakes all radiator repairs, and is equipped for large panel work on the body and cab. Portable gantry hoists are used for lifting complete vehicle bodies.

An asbestos curtain running the full width of the paint shop allows free access in manoeuvring vehicles from the workshop area. The shop is equipped for spray painting and the ventilation system installed provides for 15 changes of air per hour. Filtered and heated air flows in at roof level and is drawn away by extractor fans through ducts in the floor. The paint mix used can, if necessary, be applied at the rate of four coats per day. Sign writing is reduced to a minimum by the extensive use of transfers.

Servicing

On completion of all repair work the vehicles are serviced ready for delivery. In the service bay are two 3-ton electrically operated car lifts, an automatic oil drain unit, and a lubricating oil dispenser. Used sump oil passes direct to an underground tank and fresh oil is drawn by the dispenser from a second tank.

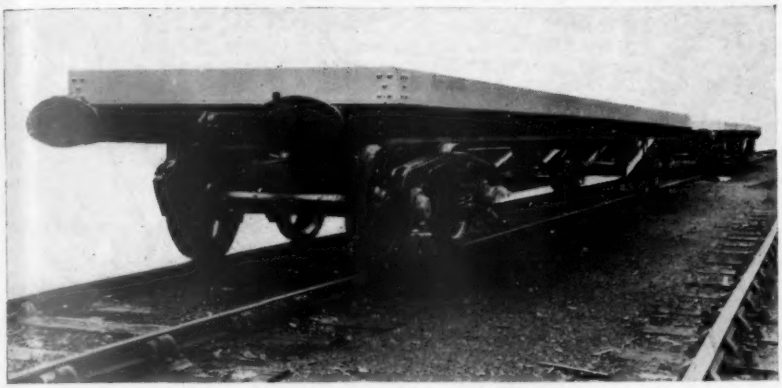
Greasing is by a compressed-air-

(*Continued on page* 574)

Drive-through rig showing pressurised washing jets

Friction-Controlled Suspension for Wagon Bogies

Design permits use of long-travel low-rate coil-springs



Partly complete 42-ton bogie bolster wagons of British Railways equipped with friction-controlled bogies

THE British Transport Commission recently placed in service on British Railways 200 wagons equipped with friction-controlled bogies with Unit brake beams. The illustration shows a partly complete 42-ton bogie bolster wagon mounted on these bogies, which are fitted with S.K.F. axleboxes. A large number of Ride Control and C-1 cast-steel bogies with friction-controlled suspension systems are in use in the U.S.A. and other countries and it is reported that their adoption is being rapidly extended.

The integral friction-controlled suspension system for wagon bogies is designed to provide maximum shock cushioning at high speeds. The Ride Control and C-1 types, both of which are made by the English Steel Corporation Limited, Sheffield, and marketed through its wholly owned subsidiary Davis & Lloyd (1955) Limited, are based on the premise that, compared with laminated springs, coil springs are superior as suspension elements over varying load conditions and more efficient for the amount of spring material used. With coil spring suspension, however, harmonic oscillations occur and should be eliminated. Ride Control and C-1 bogies are intended to achieve this through controlled friction applied by a method giving a minimum loss of the required spring cushioning characteristics.

Sandwiched Friction Shoes

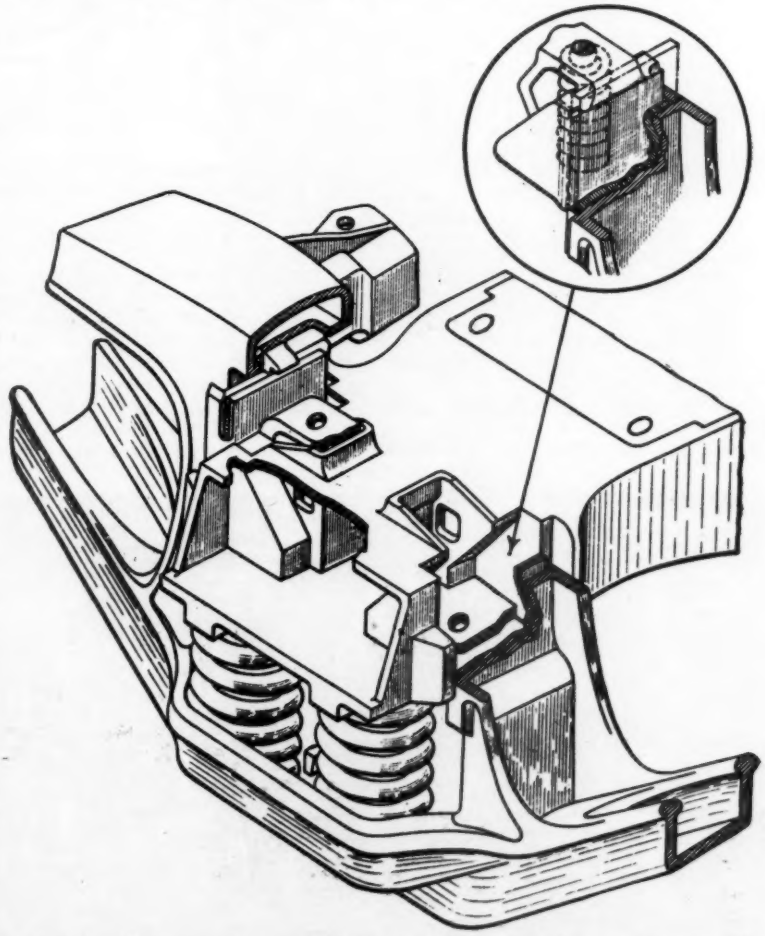
The ends of the bolsters are supported on nests of coil springs. Sandwiched between the guide faces of the bolster and the guide surfaces of the frames are spring-loaded friction shoes. These have inclined faces which bear on hardened wearing plates welded to the column guides of the frame or the bolster. The thrust of the control springs forces the hardened friction shoes against the mating plates and take up all fore-and-aft clearance between the bolsters and the bogie frames. With the damping applied in this way the frictional load is constant over the full deflection of the main springs and is equally effective during compression and rebound. The detailed arrangement and method of operation are shown in the diagrams.

The controlled friction damping permits use of long-travel low-rate coil springs which give maximum cushioning for all loading conditions, but the damping action is equally effective when used with short-travel springs. The full-width spring-loaded thrust faces of the friction shoes also ensure that the two side frames remain square with the bolster.

Lateral Movement of Bolster Checked

Lateral movement of the bolster between the check stops is resisted both by the friction shoes, which also cushion the side impact, and by the centering action of the nest of coil springs. No spring planks are required, and prevention of lost load springs is provided for by means of a deep well in the bottom of the side frame. Spring positioning lugs cast in the seating of the frame and on the bolster end eliminate the need for spring plates.

During assembly and dismantling of the frames and bolsters the friction shoe springs are compressed and the shoes held in the closed position by retaining



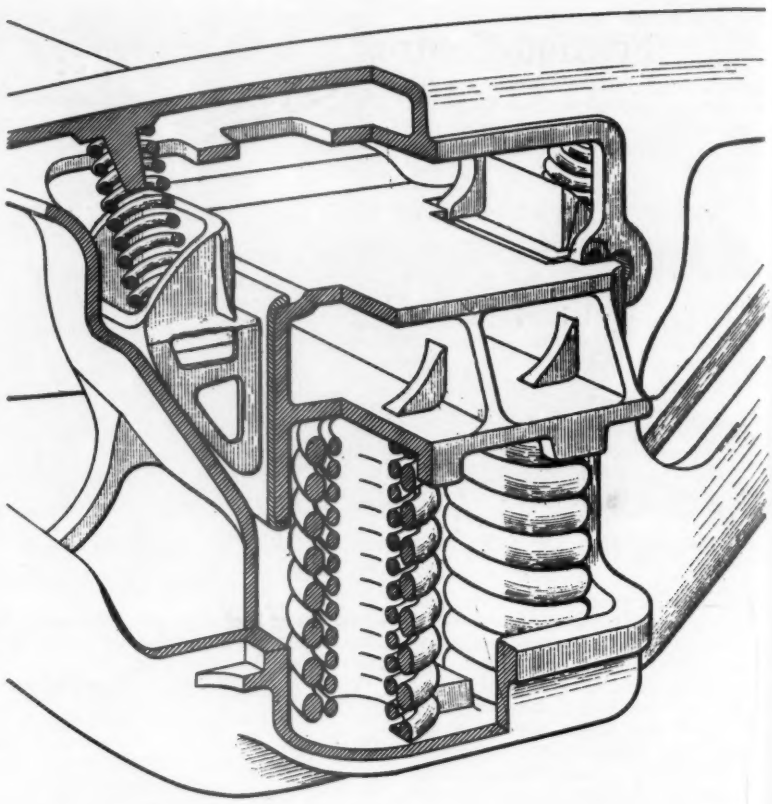
Ride Control bogie, showing fixed vertical wearing face on frame. The friction-control shoes are pushed upwards and outwards against angular abutments on the bolster

pegs. When the bolsters are finally in position in the side frames, these pegs are removed.

Unit Type Brake Beam

The side frames can be supplied with either the hanger type suspension brake beams, or pockets can be cast in the frames to accommodate the Unit type brake beam. This is a cast steel beam of truss form which, by operating in the side frame pockets, eliminates the use of hangers and brackets and also ensures that the brake shoe force is applied in a radial direction to the wheel centre.

The bogie frames can be arranged to accommodate roller bearing axleboxes and either integral or separate plain bearing boxes.



The C.1 bogie, in which friction-control shoes are pushed downwards and inwards against a fixed vertical wearing plate attached to the bolster

Road Vehicle Maintenance in Scottish Region

(*Concluded from page* 572)

operated high-pressure plant designed to dispense grease direct from the 1-cwt. containers in which the grease is supplied.

Lubrication charts for each model are displayed for ready reference. Two tyre inflation points, with wall mounted clock gauges, are located in the bay. Close inspection is maintained on vehicle tyres and a stock of replacement tyres is held for immediate use. An electric vulcaniser is used for tube repairs and an electrically-heated tool for tyre grooving.

Stores

The large store is divided into three sections: vehicle spares, interest stock, and tyres. Besides meeting Central Repair Shop requirements, the store is the main warehouse for material to service stations throughout the Region. A separate reception and despatch area facilitates handling this material. In the vehicle spares section are held all components, common user items, and special tools for each make of vehicle in the fleet.

The imprest stock section deals with the intake of all repairable material such as engines and assemblies received for overhaul. Special racks are provided for the tubes and tyres.

Staff amenities at the depot include washing facilities, individual lockers, and mess room. The administrative offices are at the north end of the building.

Engine overhaul and rebuild workshops, showing rotatable stands

ELECTRIC TRAIN FIRE IN JAPAN.—An electric train caught fire after colliding with a goods wagon in Okazaki City, Central Japan, on May 3. One passenger was burned to death and 20 others injured.

RE-BUILDING OF ARCHED BRIDGE AT JESMOND STATION.—The wrought-iron bridge over the electrified line at Jesmond Station, which is being rebuilt by British Railways, North Eastern Region, was built in 1864 by the Blyth & Tyne Railway Company when the line was constructed. Originally a branch from Backworth to Newcastle, this line provided a competitive route to that of the North Eastern Railway between Newcastle and Tynemouth. Rebuilding of the bridge became necessary because of structural weaknesses that made it unfit for modern road traffic. The main work is the removal of the old decking and replacement with a steel and concrete slab-type deck, with asphalt covering. The original abutments still will be used in the new structure, but the ornate wrought-iron arching will be removed to increase headroom. A feature of the old bridge is a cast-iron plate marked "B. & T. 1864," and arrangements are being made for this to be preserved.

RAILWAY NEWS SECTION

PERSONAL

Mr. K. W. C. Grand, Member of the British Transport Commission, has been elected President of the Institute of Transport for 1960-61.

Mr. E. T. Williams, A.M.I.C.E., Assistant General Manager (Staff), Malayan Railway Administration, who, as recorded in our April 1 issue, has been appointed General Manager, has held that position in an acting capacity since December 1, 1959. He also becomes Chairman of the Railway Board and the Port Swettenham Board. Mr. Williams was born in 1911 and was educated at Accrington Grammar School and Manchester College of Technology. He began his railway career as a pupil civil engineer in the District Engineer's Office, Blackburn, London Midland & Scottish Railway, in 1929. In 1936 he was appointed an Assistant Civil Engineer, Sudan Railways, but returned to the United Kingdom in 1938. On the outbreak of the 1939-45 war he was working with the Metropolitan Water Board and during the air raids was closely concerned with the repair of bombed water mains. Mr. Williams joined the Malayan Railway as a Civil Engineer in 1941, and had served only a few months when he was interned by the Japanese in Changi jail and Sime Road, Singapore. After the war he came back to the United Kingdom, and shortly after returned to Malaya, as District Engineer, Bukit Mertajam, where he was mainly occupied with the rehabilitation works of the port of Prai. From 1949 to 1955 he carried out successively the duties of Assistant Chief Engineer (Works) and Assistant Chief Engineer (Way). In the latter appointment he was responsible for the completion of the relaying of the East Coast Line (removed in 1943 by the Japanese) during the emergency when bandits were very active in the area. Since 1955 Mr. Williams held the posts of Stores Superintendent and Assistant General Manager (Staff) before taking up his present appointment as General Manager. He is the only pre-war expatriate officer still serving in the Malayan Railway Administration and is expected to be the last expatriate General Manager. His successor, Mr. Ahmad bin Perang, has already been appointed and is expected to take over from Mr. Williams next year.

Mr. H. F. Pallant, M.INST.T., Chief Operating Officer, British Railways Central Staff, has retired. Mr. Pallant joined the service of the Great Eastern Railway in 1916. After gaining station experience, he became a Traffic Apprentice in 1925. On completion of his training in 1929, he was appointed Assistant Yardmaster at Bradford, and occupied similar positions at Whitemoor and Spitalfields, before moving to Liverpool Street as Assistant Stationmaster in 1932. Between 1935 and 1939 Mr. Pallant successively became Assistant to the Superintendent Southern Area (Eastern Section), L.N.E.R.; Assistant District Superintendent, Edinburgh (Waverley), and General Assistant to the Superintendent, Southern Area, L.N.E.R. In January, 1940, he was appointed District Superintendent at Nottingham, L.N.E.R., moving in a similar capacity to York in 1943 and Hull in 1945. Mr. Pallant became Assistant Superintendent, North Eastern Area of the L.N.E.R. in 1946, Divisional Operating Superintendent, London Midland Region, Crewe, in 1953, and Freight Officer in the Chief Commercial Officer's Department, British Railways Central Staff in 1955. He was appointed Chief Operating Officer, Traffic Department, in March, 1958.

Mr. E. T. Williams
Appointed General Manager, Malayan Railway

Mr. H. F. Pallant
Chief Operating Officer, Traffic Department, B.T.C., 1958-60

Mr. E. L. Triffitt, Assistant Civil Engineer, North Eastern Region, British Railways, has been appointed Chief Civil Engineer, North Eastern Region.

Mr. I. C. Bahree, Officiating Divisional Superintendent, Western Railway, has been appointed Officiating Director, Standardisation (Mechanical), Research, Design & Standards Organisation, Chittaranjan.

Mr. P. L. Hall, Traffic Superintendent, Brisbane, Queensland Government Railways, has been appointed Superintendent of Transport. He succeeds Mr. H. Dinsmore, who has been appointed General Manager, South Western Division, Touwoomba.

L.M.R. APPOINTMENTS

London Midland Region, British Railways, announces the following appointments:

Mr. C. L. Parkinson, as District Engineer, Lancaster.

Mr. A. A. Crabb, as Assistant Treasurer, Euston.

Mr. L. D. Johnson

Appointed Assistant District Commercial Superintendent (Sales), Middlesbrough.

Mr. L. D. Johnson, Assistant District Commercial Superintendent (General), Middlesbrough, North Eastern Region, British Railways, who, as recorded in our April 15 issue, has been appointed Assistant District Commercial Superintendent (Sales), Middlesbrough, began his railway service in 1934 with the London & North Eastern Railway, as a clerk, at Sudbury Hill. After experience at a number of stations, he received special traffic apprenticeship training, mainly in the Hull District, becoming Assistant Yardmaster at Hull in 1949. From 1950 to 1952, he occupied positions at York, Newcastle and Sunderland and during this period made an exchange visit of four weeks to the Dutch Railways. Mr. Johnson was appointed Stationmaster, Durham, in 1952, and in 1954, became Passenger Agent, Newcastle. In 1955 he was appointed Assistant District Passenger Superintendent, Newcastle, and in 1957 Assistant District Commercial Superintendent (General), Middlesbrough, the post he vacates to take up his new position. Mr. Johnson served in the Royal Armoured Corps and the Royal Engineers (Transportation) during the 1939-45 world war. He was commissioned in 1941 and served in India from 1942 to 1946, being demobilised with the rank of Lt.-Colonel.

Mr. E. J. Brown, Chief Engineer, Chicago Burlington & Quincy Railroad, has been elected President of the American Railway Engineering Association for the ensuing year. Mr. R. H. Beeder, Chief Engineer, Atchinson, Topeka & Santa Fe Railway System, succeeds Mr. Brown as Senior Vice-President. Mr. C. J. Code, Assistant Chief Engineer (Staff), Pennsylvania Railroad, becomes Junior Vice-President.

B.T.C. Appointments

British Transport Commission announces the following appointments:

Legal Department

Mr. J. G. Dixon, Solicitor Assistant (First Division) as Senior Solicitor Assistant (First Division).

Mr. W. S. P. Kersey, Solicitor Assistant (Third Division) as Senior Solicitor Assistant (Third Division).

Manpower Department

Mr. N. Seddon, Instructor (Electrical Engineering), Training & Education Division, as Senior Instructor (Diesel Traction), B.R. School of Transport, Derby.

Mr. G. P. G. Mackay, Chief Operating Superintendent, East African Railways & Harbours, has been appointed Deputy General Manager.

Mr. H. L. Douglas, District Engineer, Taunton, Western Region, British Railways, has been transferred from Associate Member to Member of the Institution of Civil Engineers.

Mr. L. J. Belnap, a Director of the Canadian Pacific Railway Company, was appointed to the Executive Committee at the recent annual general meeting of the company. There was no change of Directors or Officers.

Mr. F. C. Margetts, representative of the British Transport Commission on the board of the Derwent Valley Light Railway Company, has retired from the board. He is succeeded by Mr. I. G. MacGregor, Traffic Manager, Hull & York, North Eastern Region, British Railways. Mr. Margetts is Assistant General Manager (Traffic), North Eastern Region.

We regret to record the death on May 1, at the age of 85, of Dr. Charles Holden, formerly Senior Partner, Adams Holden & Pearson, Architects. Dr. Holden was a distinguished architect, and among his principal works is the headquarters of the London Transport Executive at St. James Park, which, in 1929, was awarded the London Architecture Medal of the Royal Institute of British Architects.

Mr. H. J. H. Nethersole, General Manager, Traction, English Electric Co. Ltd., has been appointed a Director of the Vulcan Foundry Limited and of Robert Stephenson & Hawthorns Limited.

The Institution of Railway Signal Engineers

The following names have been entered on, or transferred in, the register of the Institution of Railway Signal Engineers :—

Member :

Mr. D. N. Basek, Divisional Signal & Telecommunication Engineer, Howrah, Eastern Railway, India.

Associate Member :

Mr. G. A. Mosby, Area Chief Signal Inspector, Stratford, Eastern Region, British Railways.

Associates :

Mr. H. Bullas, Sales Manager, Power Equipment Co. Ltd.

Mr. J. R. McDonald, Executive Director, British Insulated Callender's Construction Co. Ltd.

Mr. W. W. Jones, Work Study Assistant, Shrewsbury, Western Region, British Railways.

Mr. R. J. F. Davies, Work Study Assistant, Wolverhampton, Western Region, British Railways.

Mr. T. F. Challis, Clerk, Paddington, Western Region, British Railways.

Mr. A. K. E. Nycander, Managing Director, Swedish Ericsson Co. Ltd., London.

Mr. P. H. F. Dibden, Work Study Assistant, Wolverhampton, Western Region, British Railways.

Mr. R. W. J. Stopes-Parsons, Chief Development Engineer, M. L. Aviation Co. Ltd.

Mr. A. Calley, District Manager, Cable & Radio Electronic Components Division, A.E.I. Limited.

Transfer Technician Member to Associate :

Mr. E. G. Lawrence, Work Study Assistant, Reading, Western Region, British Railways.

Mr. G. J. Vickery, Work Study Assistant, Gloucester, Western Region, British Railways.

Mr. R. W. Saunders

Appointed Assistant District Commercial Superintendent (General), Middlesbrough.

Mr. R. W. Saunders, Chief Clerk, Cartage & Terminals Section, Traffic Headquarters, York, North Eastern Region, British Railways, who, as recorded in our April 15 issue has been appointed Assistant Commercial Superintendent (General), Middlesbrough, joined the London & North Eastern Railway in 1934. After service at a number of stations in the Norwich District he was transferred to the Norwich District Goods & Passenger Manager's Office in 1937. He served with H.M. Forces from 1940-46. Shortly after returning he received special traffic apprenticeship training in the Traffic Departments of the Hull and York Districts. In 1949, Mr. Saunders was appointed Head of the Cartage, Terminals & Works Section in the District Commercial Superintendent's Office, Hull. In 1952, he moved to the North Eastern Region Headquarters Office at York, and went back to Hull, in 1954, as Assistant Goods Agent. He returned to Traffic Headquarters, York, in 1957 as Chief Clerk, Cartage & Terminals Section, the position he now vacates.

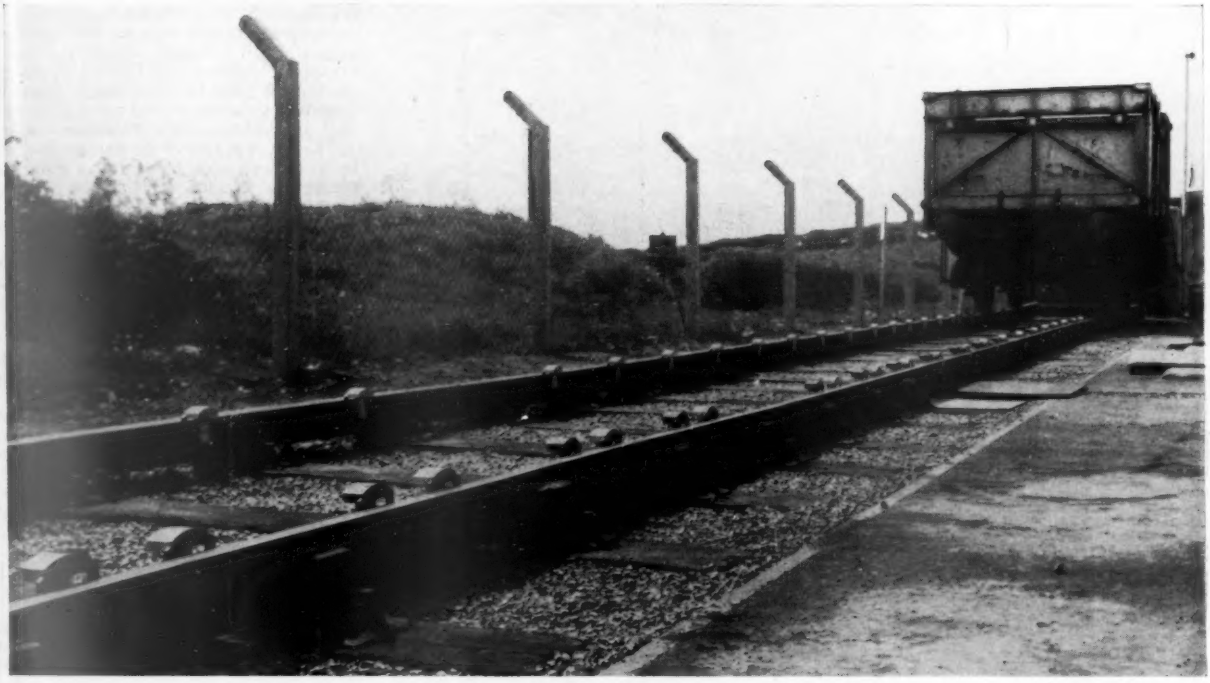
Mr. J. C. Hind, Chief Engineer (Engines), Ruston & Hornsby Limited, has been appointed Engineering Director.

Mr. Ralph Credland has retired from the board of the Widnes Foundry & Engineering Co. Ltd., a member of the Thos. W. Ward group. He had been with the group for 62 years.

Dr. Cecil Dannatt has been appointed Vice-Chairman of Associated Electrical Industries Limited, with special responsibility of co-ordinating commercial and technical policy. Mr. H. West has succeeded Dr. Dannatt as Managing Director A.E.I. (Manchester) Limited.

Mr. Henry S. Wingate, President of The International Nickel Co. of Canada Ltd., has been elected Chairman of the board and Chief Officer of the company in succession to Dr. J. R. Thompson, who has retired. Mr. J. Roy Gordon, Executive Vice-President, has been elected President. Mr. Ralph D. Parker, Vice-President in Charge of Canadian Operations, has been made Senior Vice-President of the company. Dr. Thompson becomes Honorary Chairman and will continue to serve as Chairman of the Executive Committee.

NEW EQUIPMENT AND PROCESSES



Automatic Wagon Control in Marshalling Yards

THE Dowty system of wagon control which has been under active test and development for the past 12 months represents an entirely new approach to marshalling yard problems.

Using small hydraulic units bolted at intervals to the inside of the track, automatic speed control is obtained by means of vertical pressures on the wagon wheel flange as it passes along the rail. This allows a simple and flexible installation in which short running, high buffing speeds, and wagon damage are reduced to negligible proportions.

At present there are three basic types of units available: retarders, booster-retarders, and arresters. The retarder is a completely self-contained unit which reduces the speed of a wagon travelling in excess of a design value (say 3½ m.p.h.) while having no effect on wagons moving at lower speeds.

Hydraulic Power

The booster-retarder is operated by a hydraulic power pack to which it is connected by suitable pipe-lines. As in the case of the retarder, it reduces the speed of wagons travelling above the design value but, for wagons travelling at speeds less than this, it releases energy by thrusting against the wheel flange, thus speeding up the vehicle.

The arrester brings a wagon completely to rest and is used near the departure end of the sidings. It can be rendered inoperative by remote control.

From the foregoing, it can be seen that (by selecting the correct type of units) wagon speeds can be accurately controlled on any slope without the need for complex equipment.

The main advantages of the system are:

i. Greatly reduced wagon and freight damage resulting from overspeeding and de-railment delays, mis-shunting, and short running.

ii. Elimination of conventional retarders.

iii. Reduction of hump-clearance points distance: conventional retarders and speed measuring lengths are not needed.

iv. Control at all times of wagons to an accurately pre-determined speed, independent of wind or rolling resistance.

v. Variable pre-determined speed setting.

vi. Elimination of electronic and separate speed measuring equipment.

vii. Elimination of shunting engine: wagons will be bunched up in the rake, ready for coupling.

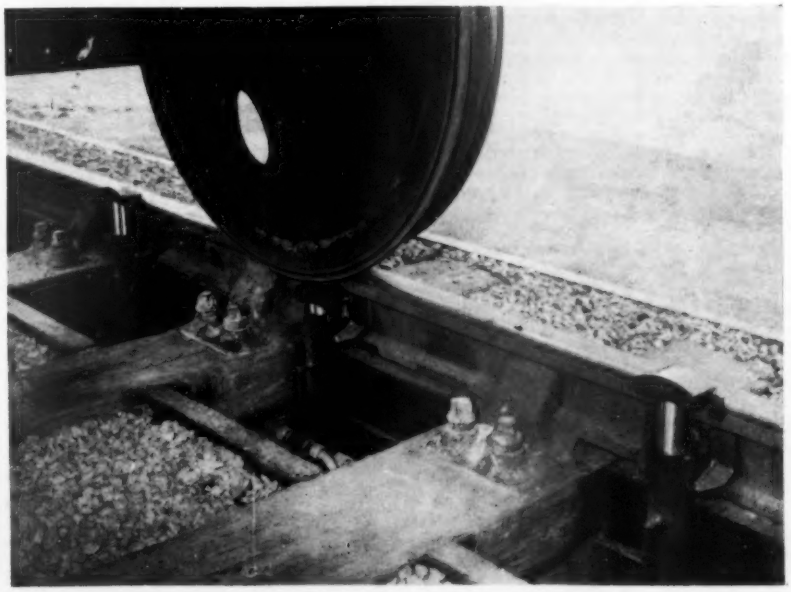
viii. Unaffected operation in varying atmospheric conditions, and in temperatures as low as 20 deg. F.

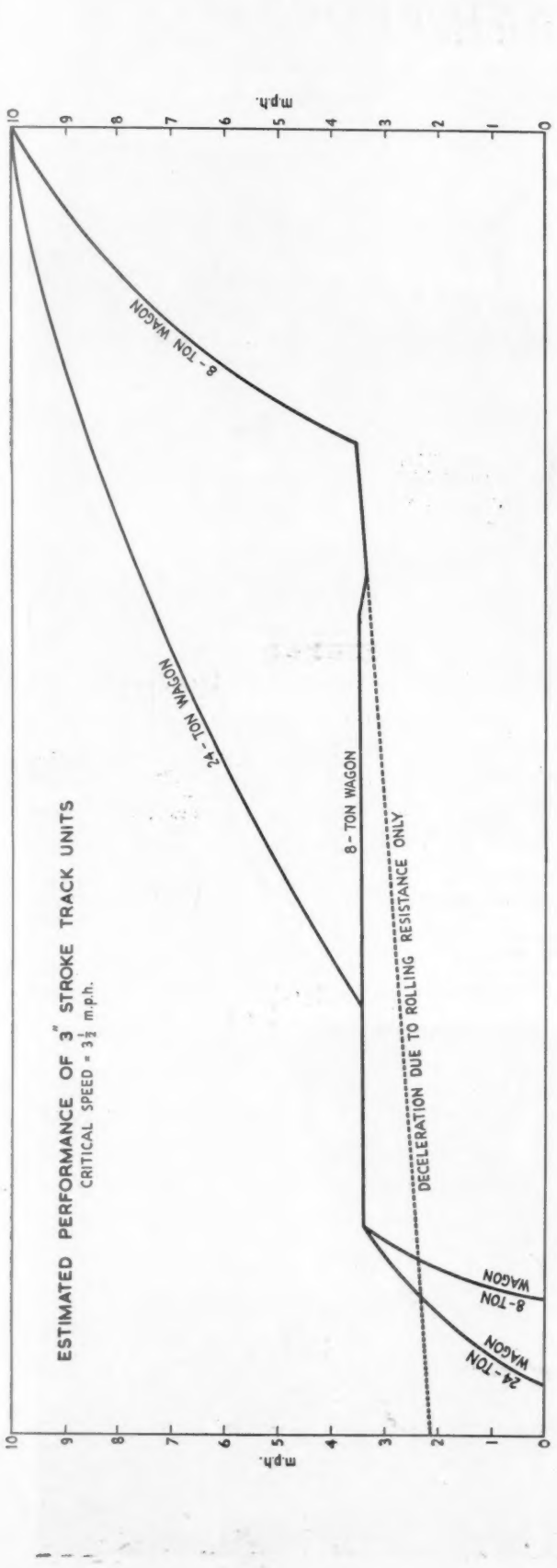
The principle of operation of the retarder-booster unit, shown diagrammatically on page 579, is as follows:—

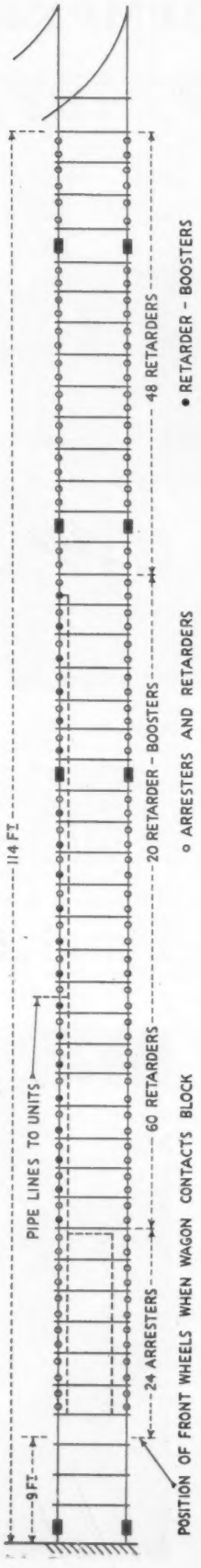
In the static position the supply pressure is contained in the central stem by the position of the cut-off valve and slide valve.

When retarding, rapid depression of the piston by wagon wheel flange lifts the speed control valve to seal against the valve stop. This causes an instantaneous rise in internal pressure, which acts on the back of the cut-off valve via the port(s) in the slide valve.

The cut-off valve moves down on its stop under the combined influence of spring and







pressure load and in doing so cuts off the lower outlet ports in the valve stem.

Further movement of the piston carries the slide valve downward, trapping pressure behind the cut-off valve and thus locking it in position.

The pressure continues to rise in the main cylinder until it is high enough to open the non-return valve at the bottom of the unit, forcing oil back into the supply line. The resistance so built up gives a retarding action thus dissipating some of the wagon energy.

The return stroke of the plunger is effected by a coil spring, oil being drawn in from the return line. The cut-off valve is held down by the hydraulic oil lock above it, preventing high pressure oil influencing the ascent of the plunger.

The last fraction of upward motion releases the hydraulic lock and the cut-off valve rises. The slide valve now prevents transfer of high pressure oil to the underside of the plunger.

In the case of a wagon travelling at less than 3 m.p.h., a different operational sequence occurs.

As the wheel flange depresses the piston, oil escapes from the main cylinder to return via the orifice in the speed control valve. Further downward movement carries the sleeve valve to a point where its port(s) coincide with the lower ports of the valve stem.

This allows the supply pressure contained in the stem to enter the main cylinder and lift the speed control to seal off against the valve stop.

Thus, with supply pressure now acting over the whole area of the piston, it rises and imparts energy by thrusting against the wheel flange.

The unit has one other important function in that it acts as a retarder should a wagon be reversed over it after striking, say, another wagon in a rake during shunting.

In this event, a trip lever mounted on the piston head produces the following results:—

i. The reversing wheel flange depresses the trip lever which operates a cam mechanism inside the piston head.

ii. Movement of the cam forces down the valve stop spindle, thus sealing off the central orifice of the speed control valve.

iii. Depression of the piston by the wheel flange now meets a retarding force caused by displacement of oil from the plunger cylinder to supply via the non-return valve.

Should it be desired to carry out normal traffic operation over lines fitted with retarder-boosters, the units may be made non-operative by releasing the supply pressure. The plungers still move in sympathy with the wheels but no energy transfer takes place.

Retarder Unit

The principle of operation of the retarder unit is as follows:—

In the static position the unit is fully self-contained and only partly filled with oil.

In the retarding position, rapid depression of the piston by a wheel flange causes an increase in internal pressure, which lifts the speed control valve and seals off the orifices in its periphery against a travel stop.

Further increase in pressure, arising from piston movement, opens the relief valve allowing oil to pass out through the holes in the side of the speed control valve.

Energy is thus dissipated from the wheel flange because of the effort required to force the oil through the relief valve.

After passage of the wheel, the piston extends at a rate controlled by the peripheral orifices in the speed control valve, the relief valve having closed by this time. A telescopic outstop holds the piston when fully extended.

Should a wagon be travelling at less than 3 m.p.h. when its wheel flange contacts the retarder the following sequence occurs:—

The piston moves down but the pressure rise is insufficient to "blow" the relief valve against its spring load, the oil escaping through the peripheral orifices of the speed control valve. Thus the unit collapses virtually without detracting from the wheel energy.

Operational Lay-Out

Economically, it is preferable to use a combination of self-contained retarder units with retarder-booster units. This arrangement keeps pipeline costs to a minimum and simplifies servicing.

The whole system can best be illustrated by the accompanying diagram which indicates what can be accomplished on a short stretch of track at the manufacturer's works at Ashchurch.

It can be seen that from 10 m.p.h., an 8-ton wagon is under control after 40 ft. and a 24-ton wagon under control after 90 ft. This diagram is based on adverse rolling resistance and level track. In practice, some small deviation from this performance is expected.

Further details can be obtained from Dowty Hydraulic Units Limited, Ashchurch, Gloucestershire.

Crankpin Repair Service

A REPAIR to the crankpins of a shunting locomotive, carried out with Master-Hone equipment recently, indicates one way of greatly reducing the cost and time of such repairs.

The only dismantling required was removal of the connecting rods, and it was not necessary to jack the locomotive off the rails or use other heavy lifting equipment.

Four crankpins were operated on, two 4½-in. dia. by 4¼-in. long and two 3¼-in. dia. by 4½-in. long. Micrometer readings showed variations in all crankpins of up to .060 in. The pins were ground round and parallel to within .002 in. by removing .070 in. of stock from each pin. The resultant surface finish was 6 micro in.

One Master-Hone and transmitter and two operators completed the work on all four pins in a total of 52 hr. Master-Hone equipment is transportable.

Further details can be obtained from Nicol & Andrew Limited, 20, Kelvin Avenue, Hillington Industrial Estate, Glasgow, S.W.2

Aluminium Satin-Etching

THE Walterbryte processes—Walterbryte H. (heavy) and Walterbryte B. (light) are immersion treatments which etch an aluminium surface to give a bright appearance while also removing extrusion marks or other surface defects.

Walterbryte H. is primarily a heavy etching treatment to remove extrusion or draw marks. Aluminium is dissolved during treatment, and will be precipitated as a sludge which must be removed periodically. The solution gradually becomes saturated with other metallic salts and impurities and is eventually replaced. Normal operating temperature is 50 deg. C. with an immersion time of 5 min. Longer immersion or higher temperatures may be necessary. After processing, the work is rinsed in cold running water before re-immersion in a de-smutting solution, and rinsed again in cold and hot water.

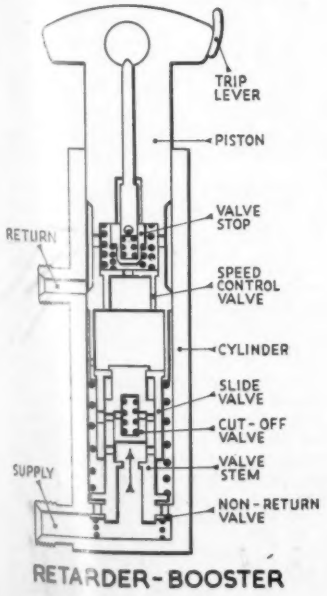
Walterbryte B. removes less metal than the Walterbryte H. process and is more suitable for light etching and treatment of surfaces. It is recommended for high-quality work.

A superfine finish on material with pronounced surface defects can be obtained by the Walterbryte H. process, followed by the Walterbryte B. process to give a high-quality finish. No rinsing or de-smutting will be necessary between the two treatments.

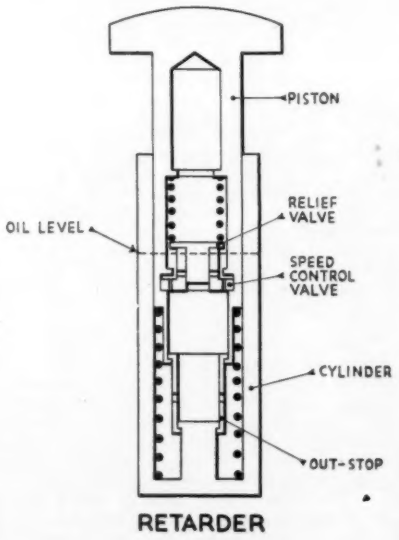
The solution will give little or no sludge formation and de-sludging will be necessary at very infrequent intervals.

After processing, the work should be rinsed thoroughly in cold running water and de-smutted as described under the Walterbryte H. process.

Further details can be obtained from the Walterisation Co. Ltd., Purley Way, Croydon.



RETARDER-BOOSTER



RETARDER

Parliamentary Notes

Closing of Railway Lines

The closing of branch lines will proceed, and none can be suspended while the Advisory Committee on broad problems of finance, organisation, and working of the B.T.C. is engaged in its task.

This was brought out in a brief debate on the adjournment in the House of Commons on May 3, when Mr. J. C. Jennings (Burton—C.) protested against the closing of the railway line between Burton and Tutbury, which has existed for 111 years. He said that the sub-committee of the Area Transport Users' Consultative Committee had not given "a fair trial."

A senior railway official from the Birmingham area, Mr. Jennings said, had given damaging evidence as the B.T.C. representative on the sub-committee dealing with the case. In the inquiry he acted as defending counsel for the Commission and took part in the discussions which led to the recommendation to the area committee, and, finally, to the Central Consultative Committee, to suspend the service. Besides being defending counsel to the Commission, he helped to act as judge and jury in the decision. It was not true that only 12 people a day used the Tutbury-Burton line on weekdays. The actual figures were an average of 10—12 per train. There were eight trains a day each way, making 16 trains a day in all. The round figures suggested 1,000 a week. If what the railway representative had said in his evidence was true, it meant that 12,000 passenger journeys a week were needed to make the service pay. Mr. Jennings suspected far too close a tie-up between the Transport Users' Committees and the B.T.C.

Was it logical, seeing that branch lines were part and parcel of the whole system, both finance and structure, to postpone closing any more branch lines until the Advisory Group had reported? If the criterion was financial loss, where did the rest of the railway system stand? Could they prove that every main line was working at a profit? Was the same criterion to be adopted?

June 11, the proposed date of suspension of the Burton–Tutbury service was well into the holiday season. That meant that people going to Burton, instead of taking the Tutbury line at a cost of 1s., would have to go to Derby, and come back along the other side of a triangle, at extra cost. On June 11, "at one fell swoop," 1,000 passengers were to be flung on to the roads, and they would get congestion in an already over-congested town. Mr. Jennings implored the Minister of Transport to re-consider his decision.

Mr. John Hay, Parliamentary Secretary to the Ministry of Transport, said that the proposal to suspend the Burton–Tutbury passenger service was made by the B.T.C. in the spring of 1959. On April 25, 1959, the West Midlands Transport Users' Consultative Committee received the proposal. A sub-committee had heard objections and supported the proposal of the Commission. After filtering through other inquiries the decision was endorsed.

Date of Withdrawing Service

There was no particular significance in the closing date except that it coincided with the opening of the summer timetables. It was generally convenient, if a service had to be withdrawn, that it should be done when the new timetables had just come into force.

It had been claimed, he added, by the Member for Burton that the B.T.C. representative on the committee took an active part in the proceedings before the inquiry, in effect by presenting the case for withdrawal of the service, cross-questioning the objectors and, then, after the objectors had withdrawn, remaining as a member of the committee to decide the issue before the committee.

It was quite proper for the B.T.C. to have a representative on the Transport Users' Consultative Committee. This power was contained in Section 6 (4) of the Transport Act, 1947.

Users' Committees Not Judicial

"There is something which I only wish that the public would grasp more than it does at present," Mr. Hay went on. "Proceedings before these committees are not in any way equivalent to a judicial proceeding. The intention always has been that they should carry out their work on practical, informal, consultative, lines and that there should not be a sort of judge and jury atmosphere, but a round table informal discussion about the proposal."

Under the Act it was open to the Minister to require the Central Transport Users' Consultative Committee to investigate any case where any real impropriety was alleged. He would gladly bring the attention of the Minister to what he said about this case.

No Suspension of Closure

The Parliamentary Secretary emphasised that whatever might result from this investigation it could not affect the withdrawal of the service. The Minister had no power to give other than a general direction to the Commission under Section 4 (1) of the Transport Act, 1947. This question of withdrawal of individual services and of the closure of individual branch lines could not be said to affect the national interest, which was what was laid down in the Statute as being requisite where a direction of this kind was given.

The Minister's power to direct the Commission as a result of the Consultative Committee procedure, Mr. Hay stated, was exercisable only in those cases where the Central Transport Users' Consultative Committee made a recommendation to him to that effect. In this case, the Central Committee had made no recommendation, and, therefore, the Minister's powers under that Section did not come into play. He had no legal power under the Statute to intervene.

Task of Advisory Group

The Advisory Group, Mr. Hay pointed out, was to consider broad problems of the finance organisation and working of the B.T.C. and to advise the Minister and the Commission. Apart from the nature of its work it could not be expected to deal with individual cases of branch line closures.

"The Prime Minister, in his statement of general policy towards the railways, made it clear that inconvenience to the public was bound to occur as a result of the alteration in the structure of the Commission and of its services.

Mr. Hay did not think they should "lightly require the Commission to postpone or defer reductions in its uneconomic services" until they made things move forward on this front after the Advisory Group had stated its views. At the moment they were subsidising the railways, since the Budget, to the tune of £90 million this year. Every reduction that could be made would help to lighten the taxpayers' load.

"Railways Should Be Made to Pay"

Mr. W. R. Rees-Davies (Isle of Thanet—C.), in the debate on Second Reading on the Finance Bill on May 3, said that they must somehow find another £100 million away from Government expenditure in the forthcoming year. It was not fair to put the decision entirely upon the Chancellor of the Exchequer. Nor, indeed, was it the task of the Treasury. It was the task of the House. He believed that the railways should be made to pay. If they did, "we would not have needed any of these tax increases this year." £90 million would be saved.

Roads Over Railways in Cities

Lord Bossom, in the House of Lords debate on road accidents on May 4, said: "As most congestion starts at the entries to our larger cities, each of which has two or three railway lines entering from the outer districts, why not construct over these rail tracks an upper level road for motors, and use this upper level as a main entry into the city?

"This principle was more or less adopted in New York—in fact, I had quite a little to do with it—to bring the trains along under Park Avenue and into New York Central Station, and allow conveyances to come over it by the two levels. This works perfectly and could, if we desired, be copied in our congested cities. It would cost a fair amount, but . . . our motorists are paying . . . £400 million a year in petrol tax and car licences, while only about £60 million is being spent on road work. . . . We all know what the Belgians did for Brussels, in the three or four years before the recent Exhibition, with new tunnels, flyovers, and widenings."

Questions in Parliament

Summer Train Service

Lt.-Colonel W. H. Bromley-Davenport (Knutsford—C.) asked the Minister of Transport on May 4 whether, with a view to giving more effective spread-over of the summer holiday season, he would give a general direction to the B.T.C. to extend summer railway passenger services at least until the end of September.

Mr. Ernest Marples, in a written answer: No. This is a matter of commercial judgment and I do not think that there is justification for a general direction.

Staff and Labour Matters

Provincial Busmen's Wages

The National Council for the Omnibus Industry, at a meeting in London on May 9, received the report of the special committee appointed on April 11.

After discussion, and a further meeting of the special committee, agreed proposals were submitted to, and adopted by, the Council. These included:—

(*a*) Increases in the basic rates of pay of 10s. 6d. a week for drivers, conductors, and semi-skilled and unskilled maintenance staffs, with effect from the beginning of the first full pay week following May 9;

(*b*) Introduction of a 42 hour working week without loss of pay for those staffs, to become effective from the beginning of the first full pay week after August 1;

(*c*) A national rate for one-man operation, accompanied by a resolution of the Council designed to facilitate an extension of this form of operation;

(*d*) An increase to 212s. 8d. in the basic weekly pay of skilled maintenance workers, to become effective from the beginning of the first full pay week after May 9, which, from the commencement of the first full pay week, after June 1, would apply to a standard week of 42 hr.

It was further agreed that the present arrangements in regard to the carriage of standing passengers should continue.

Some 100,000 workpeople in the provincial bus industry employed by private bus companies and undertakings controlled by the British Transport Commission will benefit.

Contracts and Tenders

South African Railways machinery order

Plasser Railway Machinery has received a contract from the South African Railways for 20 Plasser-Theurer hydraulic power wrenches, Model P.12.

British Railways, London Midland Region, has placed the following contracts:

Taroads Limited: tarspraying and road repairs programme 1960 in Northampton and Walsall districts

Paviors Construction Company: tarspraying and road repairs programme 1960 in Derby North district

H. V. Smith & Co. Ltd.: tarspraying and road repairs programme 1960 in London District

Johnson Bros. (Aylesford) Ltd.: tarspraying and road repairs programme 1960 in Lancaster district

Leonard Fairclough Limited: reconstruction of bridge No. 37 on Whitchurch—Tattenhall line to accommodation widening of the East of Birmingham—Birkenhead trunk road A. 41 for the Ministry of Transport

Scaffolding (Great Britain) Limited: supply, delivery, erection, and removal of temporary foot and luggage bridge with ramps and footbridge with stepways in connection with the reconstruction of Stafford Station.

British Railways, North Eastern Region, has placed the following contracts:—

W. Fairburn Limited: supply and installation of electric cabling and fittings at English Street Goods Depot, Hull

Wright Anderson & Co. Ltd.: renewal of the roof of the repair shop at Shildon Wagon Works

Midgley & Sutcliffe Limited: supply of a vertical milling machine for York Carriage Works

Cowans, Sheldon & Co. Ltd.: supply and erection of a 20-ton semi-pit type electric traverser at the carriage and wagon works, Walkergate

Brightside Heating & Engineering Co. Ltd.: supply and installation of a central heating system at Gateshead Motive Power Depot

I.T.D. Limited: one fork-lift truck for the stores department at Walkergate

Jarrat Steel, Acomb Limited: improvements to ticket collectors cabins and barriers at Bradford Exchange Station

F. & J. Watkinson: supply and erection of post and tube fencing on the lineside at Carcroft and South Elmsall

Holmpress Piles Limited: installation of piling for the foundations of the Traffic Managers new office block at Paragon Station, Hull

Pierhead Limited: supply of concrete deck units for short-span bridges

H. Morfitt & Sons Ltd.: supply and installation of a heating and hot water system in the office of the District Outdoor Machinery Engineer, Leeds

Lifting Gear Products (Eng.) Limited: supply of a new travelling trolley for the Chief Civil Engineer's Morris tracklayer

Berwick Building Co. Ltd.: erection of a power house at Tweedmouth

F. & J. Watkinson Limited: alterations and improvements to the booking and enquiry office and general waiting room at Ilkley Station.

British Railways, Southern Region, has placed the following contracts :—

Geo. Shears & Sons Ltd.: storage accommodation, Wimborne and Ringwood, and construction of new signalbox, Hythe (Frost Lane)

W. G. Beaumont & Son: station renovations, West St. Leonards

Durable Asphalte Co. Ltd.: repairs to asphalt surfaces, Waterloo Station

Maurice Hill, Limited: renovations to carriage cleaning shed, Clapham Junction

A. Smith & Sons (Heating) Ltd.: heating installation to workshops, Wimbledon

Maurice Hill Limited: cleaning and painting of bridge, St. Denys

Macartney & Sons: repairs to roof glazing, Waterloo Station

The Demolition & Construction Co. Ltd.: new berthing facilities, extension of electrification, Dover Marine

Walter Llewellyn & Sons Ltd.: new telephone exchange, Hastings

Campbell & McGill Limited: construction of new dolphins and renewal of piling, Lymington Pier Station

C. & T. Painters Limited: roof renovations, Waterloo Station

Robertson Thain Limited: renewal of roofing, Victoria Station, Eastern Section

Johnson Bros. (Aylesford) Ltd.: resurfacing and surface dressing of roads, footpaths and station platforms, Ashford District

The Fairfield Shipbuilding & Engineering Co. Ltd.: supply and delivery of steel and ironwork and waterproofing of deck, Cannon Street, Borough Market Bridge

John Laing & Son Ltd.: construction of steel gantries over berthing sidings, extension of electrification, Folkestone Junction

Limmer & Trinidad Lake Asphalt Co. Ltd.: resurfacing and surface dressing of roads, footpaths and platforms, Eastleigh Engineering District

The General Asphalt Co. Ltd.: resurfacing and surface dressing of roads, footpaths and platforms, Exeter Engineeering District

The Export Services Branch, Board of Trade, has received calls for tenders as follow :—

From Chile :

4 railway weighbridges, three of 80 *tonnes* capacity and one of 100 *tonnes* capacity.

The issuing authority and address to which bids should be sent is the Ferrocarriles Del Estado, Depto. de Traccion y Maestranzas, Alameda 924, 2° Piso, Santiago, Chile. The closing date is May 30, 1960. Tender copies

A.C. Multiple-Unit Stock on Exhibition

(*At Marylebone Goods Depot.* [*See our April 29 and May 6 issues*)

Motor coach of Eastern Region three-car suburban train

Driving trailer of Glasgow suburban three-car train, Scottish Region

can be inspected at the Board of Trade, but photo-copies are not available. The Board of Trade reference is ESB/12016/60.

From India :

600 sets of sleeper tampers, with self-contained power unit, petrol engine

10 sets of sleeper tampers, electric driven, with a separate power unit.

The issuing authority and address to which bids should be sent is the Director, Railway Stores, Railway Board, State Entry Road, New Delhi. The tender No. is GP20/Dev/1960-61. The closing date is June 1, 1960. The Board of Trade reference is ESB/11707/60.

From Sudan :

Material for the signalling of 15 stations on the Atbara-Khartoum Line, comprising double-wire lever frames complete; facing point locks layouts, 3 ft. 6 in. gauge 75 lb. rail; mechanism to operate lower quadrant signals; operating mechanisms for points and facing point locks and signal wires, wheels, pulleys and stakes; and 4-in. switch blades.

The issuing authority is the Stores Department, Sudan Railways. Bids accompanied by a 2 per cent deposit, should be sent to the office of the Controller of Stores, Atbara. The tender No. is 2162. The closing date is June 1, 1960. No further information is available at the Board of Trade. The Board of Trade reference is ESB/12026/60.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).

Notes and News

British Transport Hotels.—We regret that one of the illustrations to the article " British Transport Hotels," by Mr. E. J. Vacher, Chief Hotels Manager, British Transport Hotels & Catering Services, which was published last week, was wrongly captioned. The caption which described the top block on page 536, should have read : " Newly-altered and re-decorated lounge of Caledonian Hotel, Edinburgh."

Southern Region Publicity.—With a view to stimulating public interest in its activities, the Southern Region of British Railways has designed a display unit for installation in various ticket halls throughout its extent. The first exhibition was made at Margate Station and is illustrated on this page. The display can be enlarged or reduced according to the size of the ticket office in which it is to be accommodated. Mobile, and intended for exhibition during a limited period only at any one station, these units will be increased to cover all parts of the Region.

All Yorkshire Rugby League Cup Final.—The Rugby League Cup Final, between Hull and Wakefield Trinity will be played at Wembley tomorrow, May 14. North Eastern Region, British Railways, is to run 40 additional trains, including many excursions. On some trains refreshment services will be provided. The excursions will run to Marylebone, Kings Cross, St. Pancras or Wembley Hill, and a special frequent service will run between Marylebone and Wembley Stadium Station from noon.

First Excursion to Loch Linnhe by Diesel Train and Steamer.—The first day excursion to Loch Linnhe by diesel train and steamer took place on May 10. The diesel train left Glasgow Queen Street at 7.53, and arrived at Crianlarich Upper at 10.1. Here the train divided; one section went on to Oban and the other to Fort William. Passengers at Oban had time to look around before boarding the MacBrayne steamer which left at 1.30 p.m. for Fort William, arriving at 3.30 p.m. The diesel train left Fort William at 6.18 p.m. for Glasgow Queen Street, reached at 10.20 p.m. Passengers who proceeded on the outward train to Fort William arrived at 12.33 p.m. and sailed on a MacBrayne's steamer at 3.40 p.m. for Oban. There they joined the diesel train at 6.50 p.m. and arrived Buchanan Street Station at 10.25 p.m. Similar excursions will run on May 17 and 23.

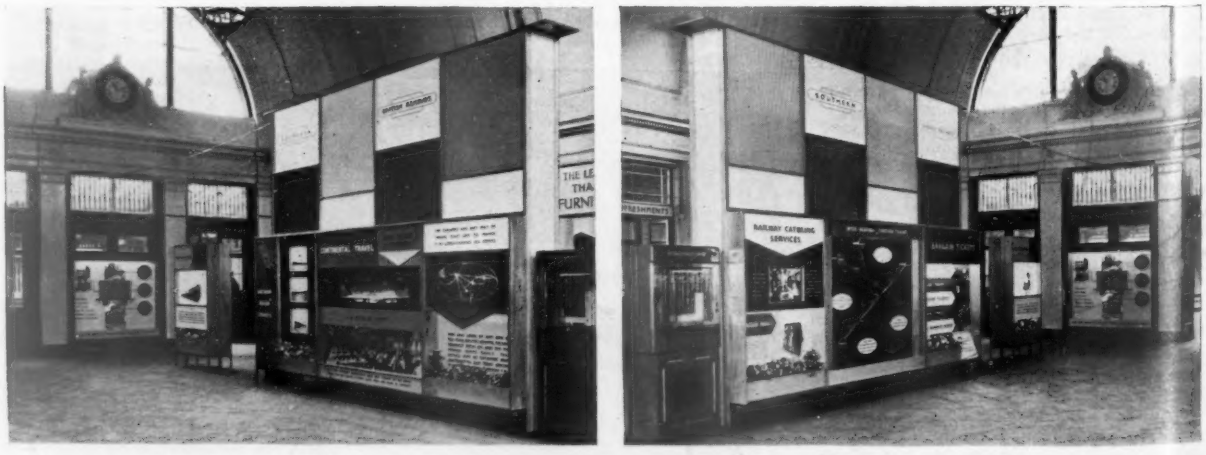
B.I.M. Conference on Management Consultants.—The selection and work of management consultants in industry and commerce will be the subject of a one-day conference of the British Institute of Management at the Savoy Hotel, London, on May 25. There will be emphasis on the importance of proper selection of the consultant and on the ways in which his time and skills can be best used. Sir Ewart Smith, formerly Deputy Chairman of Imperial Chemical Industries Limited, will preside. Talks will be given by consultants on organisation and control in production, marketing, and management control. A Managing Director, Mr. F. W. Rowe of K. & L. Steelfounders & Engineers Limited, will describe his experience as a user, and Sir Ewart Smith, several consultants, and a trade unionist, Mr. Edwin Fletcher, of the T.U.C., will act on a brains trust to answer general questions. A confidential register of consultants is operated by the B.I.M. Consultants are admitted only after a committee of industrialists and leading consultants is satisfied as to the standards of professional conduct and proficiency of those considered for inclusion.

Grant Lyon & Co. Ltd. Acquired.—The Chamberlain group of companies states that it has acquired Grant Lyon & Co. Ltd., civil engineers and railway contractors.

Alco Products Inc. New York Office.—Alco Products Inc. has moved its executive and sales offices to 530, Fifth Avenue. The purpose of the move was a more central position in the metropolitan area. The new address, at the corner of Fifth Avenue and 44th Street, is in Postal Zone 36. The telephone number is Yukon 6-0600.

Holiday Period Tickets from Sheffield Area to East Coast Resorts.—Reduced fare holiday period tickets from the Sheffield district to Skegness, Sutton-on-Sea, Mablethorpe and Yarmouth, are again to be issued this year by the Eastern Region, British Railways. The facility will be extended to include Lowestoft and the tickets will be available from most stations in the Sheffield, Mexborough, Penistone, Barnsley, Rotherham, Chesterfield, and Shirebrook areas. The tickets offer a saving of approximately 4s. in the £1 on each adult ticket and allow travel by any ordinary or advertised special train. They will be valid for the return journey the day after purchase or any day up to 15 days. The period of operation is from June 3 to October 31, but from some stations issue will be suspended on certain Saturdays in July and August.

Some Rail and Bus Fares Increased.—Some British Railways and London Transport fares were increased on May 8. The 4d. and 5d. single bus and Underground fares have been increased by 1d. and early morning single fares on buses by 1d. for a six-mile journey and 3d. for longer journeys. Early morning return fares on the Underground are increased by between 1d. for six miles and 6d. for 17 to 20 miles, with higher increases for longer journeys. Underground season tickets are increased by about 4 per cent for two miles to about 14 per cent for 26 miles and over. In addition, a few 6d. and 8d. single bus and Underground fares, which were not raised when the majority went up last year, are also increased by 1d. On British Railways, the monthly second class



Back and front views of prototype display unit shown at Margate Station, Southern Region, British Railways (see paragraph above)

season ticket for five miles is £2 1s. compared with the old rate of £1 18s. 6d. For 50 miles it is now £9 2s. instead of £8. New rates for weekly tickets are about one quarter of the monthly rate plus 10 per cent. First class rates are about 50 per cent above second class.

Presentation to Mr. H. F. Pallant.—Mr. H. F. Pallant, who, as recorded in our Personal columns this week, has retired as Chief Operating Officer, British Railways Central Staff, was recently presented with a cheque by Mr. D. Murray, President of the Senior Officers mess, on behalf of members of the mess. The accompanying illustration shows the presentation ceremony.

Mr. H. F. Pallant (left) receiving a cheque from Mr. D. Murray.

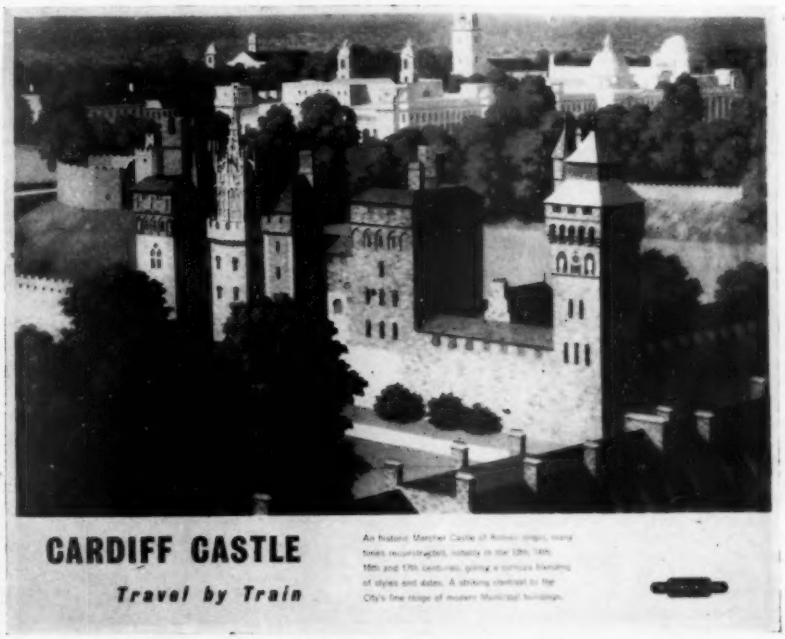
North Eastern Region "Safety on the Roads" Campaign.—A silver cup, given by the Company of Veteran Motorists to the North Eastern Region, British Railways, in 1956, for annual competition between the districts of the Region in connection with the Safety on the Roads Campaign, has been won for the year 1959 by the Newcastle District Goods Superintendent's District. The cup is awarded to the district showing the highest percentage improvement in the number of blameworthy accidents. In 1959, there were, in the North Eastern Region, 1,515 vehicle drivers of whom 1,266 (81 per cent) entered the National Safe Driving Competition. The total mileage covered by the fleet of 1,451 vehicles was 9,761,167. The silver cup was presented to Mr. S. Cott, District Goods Superintendent, Newcastle, by Mr. W. H. Vine, Commercial Officer, North Eastern Region, on May 5, at the Queens Hotel, Leeds.

Road Haulage Relief Vehicles Test Case.—Boston Stevedores Limited, haulage contractors, recently won, at Nottingham, a test case important for the road haulage industry. The Traffic Commissioner for the East Midlands, granted the company's application to add 10 vehicles to its "A" licence to be used when any of its vehicles was off the road for overhaul or repair. The Ministry of Transport has pointed out every firm which applies for relief under Regulation 15 of the Road Traffic Act may now make a similar application. It was explained at the hearing that every time a lorry broke down application had to be made under the regulation if the haulage company wished to use a substitute vehicle. The Traffic Commissioner stated that this was "a nuisance to the haulage people and to my office." Most of Boston Stevedores' 139 vehicles had been bought from the British Transport Commission, but were now becoming aged. Fearing re-nationalisation, the firm had not bought new vehicles until after the General Election. In the meantime the company had a high number of repairs, and it was essential that it had relief from Regulation 15. Objecting to the application, Mr. A. W. Balne, for the B.T.C., said that the Commission regarded the exploitation of temporary substitution under Regulation 15 as wrong.

Railway Relics and Modern Equipment Shown at Stoke-on-Trent Jubilee.—The London Midland Region, British Railways, has arranged an exhibition in the North-Western Goods Yard at Stoke-on-Trent, as part of the City of Stoke-on-Trent Jubilee celebrations. The display includes relics of the former North Stafford Railway; the London & North Western Railway locomotives *Cornwall* and *Hardwicke*; a North Stafford Railway "L" Class 0–6–2 tank engine; a Type "2" diesel-electric locomotive; and "Coronation" class 4–6–2 engine *City of Stoke-on-Trent*. Also on view are items and photographs of the various types of equipment to be used in the London Midland Region electrification. The exhibition was opened by the Lord Mayor of Stoke, Alderman Harold Clowes, on May 11. After the opening the Lord Mayor was presented with a model of the *City of Stoke-on-Trent* locomotive by Mr. J. Pollard, Assistant Divisional Traffic Manager, West Midlands Division, London Midland Region. The display is open until May 24 from 11 a.m. to 8 p.m.

Western Region Publicity.—Illustrated on this page is one of five more new posters issued by the Western Region of British Railways (other recent examples were shown in our April 8 issue). This poster of Cardiff Castle was printed by Jordison & Co. Ltd. in seven colours to a design by Ronald Lampitt. Some 2,250 copies will be used for a two-year display throughout British Railways. Three of the other posters, also strictly representational in style, showing views of Wales, Worcestershire, and Exeter Cathedral, will be displayed also in North America. The fifth poster, which deals informatively with Margam Marshalling Yard, carries half-tone illustrations, a detailed line diagram of the yard's layout, and a brief outline of its sorting method.

London Transport Special Sunday Outing Bus Trips.—London Transport country buses are to run family outing trips this summer from 92 towns and villages in the outer London area to more than a dozen pleasure spots. They will start on May 15. A network of 49 special routes, operating mainly on Sundays and Bank Holidays, has been worked out. Seats can be reserved in advance. At the majority of the pick-up points passengers will have a choice of from two to five



One of five new posters produced by the Western Region of British Railways

different trips. Main centres of attraction are London Airport, Whipsnade and Chessington Zoos, Windsor and Hampton Court, which will be served by 32 of the special routes.

Opening of B.I.C.C. Fully-Automatic Copper Rod Rolling Mill.—Mr. Reginald Maudling, President of the Board of Trade, officially opened a new fully-automatic copper rod rolling mill at the Prescot Works of British Insulated Callender's Cables Limited last Tuesday. The mill cost £1,500,000 and has a normal production of 100,000 tons a year. Mr. W. H. McFadzean, Chairman of B.I.C.C. welcomed Mr. Maudling and stated that it was exactly 60 years ago that the first rolling mill was installed at Prescot. That had a capacity of 6,000 tons a year. Mr. Maudling said that he welcomed the opportunity of congratulating the company on having installed the most modern mill in the world. It was normal for a British company to have the best, but quite unusual to have the largest as well.

Progress on Installation of A.W.S.—Five principal routes on British Railways are at present being provided with Automatic Warning System (A.W.S.). By March this year, on the East Coast main line, 275 route miles between Kings Cross and Newcastle, and 50 between Berwick and Edinburgh, had been equipped. So too were the entire 47 route miles between Glasgow and Edinburgh, Scottish Region. Installation on the West Coast main line of the London Midland Region was complete over 133½ route miles (Euston to Stafford) out of 466. In the Southern Region 88 route miles (Exeter to Salisbury) has been equipped. Between Liverpool Street and Norwich (via Ipswich) in the Eastern Region, 18 of the 115 route miles had been completed on the Colchester, Clacton and Walton Branches.

Railway Stock Market

Uncertainty returned to stock markets, and share values moved lower again, though, subsequently, buyers were more in evidence. The warning by the Chancellor of the Exchequer that, if necessary in the future, he would tighten the credit squeeze has affected sentiment, though the general City view is that further steps by Mr. Heathcoat Amory are likely to prove unnecessary, Company results coming to hand continue to show higher profits in many cases, and some higher dividends as well, but they have had little influence on stock markets, which have also been affected by conflicting views about the outlook for Wall Street.

Foreign rails were not without features. Buyers were about for Antofagasta ordinary stock, which strengthened from 14 to 14½, while compared with a week ago, the preference stock rose from 28 to 30½; the 4 per cent perpetual debentures were 44½ and the 5 per cent (Bolivia) debentures 105.

Costa Rica ordinary stock was marked up from 31½ to 37½; the first debentures kept at 90, but the second rose from 95 to 110xd. Mexican Central "A" debentures eased to 58, United of Havana second income stock remained at 6, but Brazil Railway bonds came back from 7 to 6 and Sao Paulo Railway 3s. units were 1s. 3¾d. compared with 1s. 4½d. a week ago.

Chilean Northern first debentures were more active and quoted at 59½. Paraguay Central prior debentures were again quoted at 15½ and Guayaquil & Quito assented bonds at 77.

Elsewhere, International of Central America shares remained at 23½, but the preferred rose from $112½ to $117½.

Canadian Pacifics were fractionally better at $47. The preference stock rallied to 59⅜ and the 4 per cent debentures gained a point at 65. White Pass shares eased to $13¼.

West of India Portuguese capital stock remained at 111, and Barsi Light Railway at 16. Nyasaland Railways shares were again 10s. with the 3½ per cent debentures 49½. Gedaref Railway & Development 5 per cent guaranteed debentures were 92½.

There were small mixed movements among shares of locomotive builders and engineers, but declines predominated because of the general trend in stock markets. After their recent reaction, Beyer, Peacock 5s. shares have rallied from 6s. 9d. to 7s. 6d. on further consideration of the report and accounts. Birmingham Wagon reacted further from 33s. 6d. to 32s. 6d., while Charles Roberts 5s. shares were lower also, at 12s. 6d. compared with 13s. 9d. a week ago.

North British Locomotive were 9s., G. D. Peters remained at 19s. 4½d. and Gloucester Wagon 10s. shares at 11s. 9d., but Wagon Repairs 5s. shares firmed up from 11s. 3d. to 11s. 6d. Babcock & Wilcox at 35s. 1½d. were again lower on the cut in the dividend to 9 per cent, and Clarke Chapman shares came back to 48s. Vickers also were down with the general trend of markets, and at 29s. 6d. now yield 6¾ per cent.

Associated Electrical reacted from 55s. 52s. 7½d., English Electric were 38s. 7½d. compared with 40s. 3d. a week ago, and General Electric 38s. 3d., compared with 38s. 9d. Crompton Parkinson 5s. shares eased from 12s. 3d. to 11s. 9d. Elsewhere, Dowty Group 10s. shares came back from 33s. 3d. to 31s. 6d. and Pressed Steel 5s. shares from 34s. 1½d. to 32s. Guest Keen were lower despite the higher dividend, but later showed some improvement at 80s. 9d.

OFFICIAL NOTICES

EDITORIAL ASSISTANT REQUIRED

EDITORIAL ASSISTANT required for *The Railway Gazette*. Young man who is familiar with railway affairs. Some technical knowledge an advantage. The ability to write clearly, concisely and accurately, is essential. Write: The Editor, The Railway Gazette, 33, Tothill Street, S.W.1.

APPLICATIONS are invited from Engineering Draughtsmen to fill positions in a Company engaged in the manufacture of steel castings, forgings, engineering equipment and railway trackwork.

Applicants should have had drawing office and design experience in any of the above spheres, and should also possess technical qualifications of at least the Ordinary National Certificate in Mechanical Engineering.

Five-day week, pension scheme, staff dining and welfare facilities available.

Reply, stating age, experience and salary required, should be addressed to the Personnel Manager, Messrs. Hadfields Ltd., East Hecla Works, Vulcan Road Sheffield, 9.

RHODESIA RAILWAYS. Vacancies for Signals and Communications Engineers. Vacancies exist on the Permanent Staff for Signals and Communications Engineers for service in the Chief Engineer's Department of the Rhodesia Railways.

Preference will be given to applicants who have had previous experience in the design, installation and maintenance of modern colour light signalling and/or telecommunication systems with a Railway Administration or with a firm of equipment manufacturers.

Applicants should hold a degree in Electrical Engineering at a recognised University or be Corporate Members of the Institution of Electrical Engineers. Applicants who have passed Parts I and II of the Institution examinations will be considered for appointment to the grade of Technical Assistant until such time as they become Corporate Members and are, therefore, eligible for transfer to the Professional Grade. Successful candidates will be expected to become Corporate Members of the Institution of Railway Signal Engineers in due course.

The salary scale for Assistant Engineers is £1,000 to £1,800 per annum, plus a Cost of Living Allowance at present calculated on 12% of the basic salary, subject to a maximum of £13.15.0 per month. The commencing salary will depend upon previous experience of applicants. The annual increments in the above scale are as follows:—

£1,000 x £100 to £1,200
£1,200 x £50 to £1,500
£1,500 x £100 to £1,800

Further advancement to the grade of District Signals and Communications Engineer on the salary scale £1,800 x £100 to £2,100 is possible as and when vacancies occur. Promotion to these posts is by selection.

Membership of the Contributory Pension Fund and Medical Fund is obligatory and the usual Railway privileges in respect of travelling concessions, leave, etc., will apply.

Income Tax in the Federation is not unreasonable and at the present time, a married man with one child, earning £1,100 per annum would not be liable.

Housing is provided at a moderate rental for married Engineers; the rental payable is £7.10.0 per month for Officers in receipt of a salary under £1,700 per annum, and £10 per month for Officers in receipt of higher salaries.

Full particulars with regard to age, training, qualifications and experience should be submitted together with copies of recent testimonials to: The London Agent, Rhodesia Railways, 241, Salisbury House, London Wall, London, E.C.2, from whom full details regarding conditions of service may be obtained.

RHODESIA RAILWAYS. Vacancies for Civil Engineers. Vacancies exist on the Permanent Staff for Civil Engineers for service in the Chief Engineer's Department of the Rhodesia Railways. Normally applicants under 30 years of age will be given preference.

Applicants under 25 years of age should possess a degree in Civil Engineering.

Applicants over 25 years of age should possess a degree in Civil Engineering and be prepared to sit Part III of the examination for Corporate Membership of the Institution of Civil Engineers within a reasonable period, or should be Corporate Members of the Institution.

Applications will also be considered from men who have passed Parts I and II of the Institution examinations, for appointment to the grade of Technical Assistant until such time as they become Corporate Members and are, therefore, eligible for transfer to the Professional Grade.

The salary scale for Assistant Engineers is £1,000 to £1,800 per annum, plus a Cost of Living Allowance at present calculated on 12% of the basic salary, subject to a maximum of £13.15.0 per month. The commencing salary will depend upon previous experience of the applicant. The annual increments in the above scale are as follows:—

£1,000 x £100 to £1,200
£1,200 x £50 to £1,500
£1,500 x £100 to £1,800

Further, advancement to the grade of District Engineer on the salary scale of £2,000 x £100 to £2,300 per annum is possible as and when vacancies occur. Promotion to these posts is by selection.

Membership of the Contributory Pension Fund and Medical Fund is obligatory and the usual Railway privileges in respect of travelling concessions, leave, etc., will apply.

Income Tax in the Federation is not unreasonable and, at the present time, a married man with one child, earning £1,100 per annum would not be liable.

Housing is provided at a moderate rental for married Engineers; the rental payable is £7.10.0 per month for Officers in receipt of a salary under £1,700 per annum, and £10 per month for Officers in receipt of higher salaries.

Full particulars with regard to age, training, qualifications and experience should be submitted, together with copies of recent testimonials, to: The London Agent, Rhodesia Railways, 241, Salisbury House, London Wall, London, E.C.2, from whom full details regarding conditions of service may be obtained.

PERMANENT WAY INSPECTOR required by EAST AFRICAN RAILWAY AND HARBOURS, on contract for tour of 36-48 months. Commencing salary according to qualifications and experience in scale (including housing factor) £1,149 to £1,425 a year. If employed on construction an additional allowance of between 10% and 20% of salary is payable. Gratuity at rate of 10% of total consolidated salary drawn. Outfit allowance £30. Free passages. Liberal leave on full salary. Candidates should be experienced as Sub Permanent Way Inspectors or Relaying or Length Gangers and they should be able to keep Muster Rolls, Stone Records and Permanent Way Returns. Write to The Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, qualifications and experience and quote M2B/51013/RA.

REQUIRED FOR THE CENTRAL RAILWAY OF PERU. Assistant Engineer (Civil). Capable of designing steel bridge work, simple reinforced concrete structures and alterations to existing steel structures, of field work in connection with new projects and supervision of construction. Must be Chartered Civil or Structural Engineer with at least 5 years' experience in position of responsibility covering both design office and field work. Railway experience and knowledge of Spanish advantageous but not essential. Age 30-40, preferably single. Salary offered £1,550/£1,650 according to experience. Apply in writing to: Peruvian Transport Purchasing Company Limited, Suffolk House, 5, Laurence Pountney Hill, Cannon Street, London, E.C.4.

MASTER MECHANIC for railway operating Peru. Minimum five years' apprenticeship in steam railroad shops and five years' practical experience with Diesel-electric traction essential. Age 30/40 years. Three-year contract, free passage out and home. Healthy mountain climate. Salary U.S. $500 monthly —Box 960, *The Railway Gazette*.

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